October 2007

Submitted by:

**Milwaukee Public Schools**

*For years: July 1, 2008 through June 30, 2011*

William G. Andrekopoulos, Superintendent of Schools

Michelle Nate, Chief Finance and Operations Officer

Arleen Dansby-White, Director of Instructional Leadership and Support

**Contact Persons:**

Kathy Williams, Director of Teaching and Learning
  swopekr@milwaukee.k12.wi.us
  414-475-8252

James Davis, Director of Technology
  davisj@milwaukee.k12.wi.us
  414-475-8171

**Milwaukee Board of School Directors**

Peter Blewett, President, District #6
Tim Petersons, District #1
Charlene Hardin, District #4
Danny Goldberg, District #7
Bruce Thompson, At-Large

Jeff Spence, Vice President, District #2
Michael Bonds, District #3
Jennifer Morales, District #5
Terry Falk, District #8

Submitted to the Milwaukee Board of School Directors for approval.
In the midst of accelerating technological change, rapidly accumulating information, increasing global competition and increased workforce requirements it has become clear that students must master more than the “3R’s” for success in their futures. Planning for today’s K5 student who will graduate in 2018 requires forward thinking and planning. The world we will send them out to will not be the one we see today. Students will need to be able to adapt to changing needs, juggle multiple responsibilities and routinely make decisions on their own. They will need to be self-directed learners with a strong educational foundation in order to have the flexibility and skills necessary to compete and succeed. They will need to be able to do this in a digital society.

As technology explode and the economy becomes more global, basic skills become much more integrated and relative to specific application. Today’s citizens must be able to interact on a daily basis with a variety of technologies, solve complex problems and communicate clearly and effectively. Today’s jobs that offer an opportunity for economic independence demand strong academic and technical skills and technological proficiency.

The Milwaukee Public Schools' Information and Technology Strategic Plan has been written as a systemic framework toward maximizing current resources and building upon past accomplishments in order to continue the momentum towards a 21st century learning environment that will serve the needs of its students and community. This plan supports and aligns with the district’s strategic plan and is a core strategy in building the foundation of a successful school system.

Key components of the plan focus on educator and student proficiency, communication with parents and stakeholders, a robust library media program, and the need to maintain the technology transport to meet the needs of the schools to seamlessly integrate tools and methods into an educational model and business practice. An unprecedented project is underway to build a comprehensive integrated resource information system (IRIS) intended to address all key elements of resource use at the district, school, classroom, and student levels. This system will allow data on resources to be linked to educational services and instructional strategies which will facilitate analyses on the impact toward improving student achievement and closing achievement gaps. The IRIS system will be used to fully implement performance-based budgeting at the district and school levels. Ongoing formative and summative evaluation of all components of this strategic plan is included to help make sound decisions both fiscally and educationally in order to maximize the technology of the time and to plan for the future.

The link between professional development, instructional practice and student achievement has been well documented in educational research. Effective technology use, like effective teaching, must challenge and engage students. Use of computers or technology itself does not have an effect, but rather HOW the technology is used. (Papanastasiou, Zemblyas and Vrasidas, 2003) Teachers who receive professional development are more likely to use technology beyond the foundational level, which creates stronger student engagement. Chris Dede of Harvard University states that, “Distributed learning communities should aid educational practice, professional development and the transformation of schooling to foster 21st century knowledge and skills.” Educators must be self-directed, cyclical learners. The professional development they receive must carry them from learner of technology, to teacher of technology, assessor of technology, and back to the learner again.

Milwaukee Public Schools, along with its community and all of its administrative support, are collaborating to provide a systemic approach in which to serve its students with the best quality education in a digital society in order to prepare self-directed learners who are ready to meet the needs of the state economy and community with skills and knowledge that will make them successful contributors in their futures. The use of technology to foster student learning has been identified by MPS in its characteristics of a high performing urban classroom. This strategic plan moves the district towards focusing on the achievement needs of all students and the need for innovative, up to date instructional strategies that utilize technology, aligned with learning standards in order to meet the diverse needs of an urban population and prepare students to be contributors in a digital society.
# TABLE OF CONTENTS

A. INTRODUCTION
   Analysis of Relevant Research and Best Practices .................................................. 4-13
   District and Information and Technology Vision and Mission .................................. 14-15
   Alignment with District Strategic Plan ...................................................................... 16-23

B. BACKGROUND INFORMATION
   School and Community Demographics ................................................................. 24
   Student Achievement Data ....................................................................................... 24-26
   History of the Evolution of the Library Media Program ........................................... 27-28
   History of the Evolution of the Instructional Technology Program .......................... 28-31
   Planning Process and Team ..................................................................................... 31-34
   Collaborative Initiatives ......................................................................................... 34-40

C. NEEDS ASSESSMENT / CURRENT STATUS
   Progress on 2005-2008 Information and Technology Strategic Initiatives ............... 41-49
   Needs Assessments Reflecting on Wisconsin Focus Areas
      • Student and Educator Proficiency through Effective Teaching and Learning Practices ........................................ 50-53
      • Access to Information Resources and Learning Tools ......................................................................................... 53-54
      • Resources and Fixed Assets................................................................................................................................. 54
      • Support Systems and Leadership ......................................................................................................................... 54-57
      • No Child Left Behind Alignment ......................................................................................................................... 58
      • Grade 8 Technology Literacy Requirements – Implementation and Timeline ................................................... 59

D. GOALS AND OBJECTIVES ....................................................................................... 60

E. IMPLEMENTATION ACTION PLAN
   Implementation Action Plan .................................................................................... 61-93

F. DISSEMINATION TO STAKEHOLDERS
   Communicating the Plan ......................................................................................... 94
   Adult Literacy Opportunities .................................................................................... 94-95

G. MONITORING, EVALUATING, AND REVISING THE PLAN .................................. 96-105

H. BUDGET ................................................................................................................. 106-110

I. APPENDICES
   1. Selected District Demographics and Achievement Trends .................................... 112-120
   2. Research Bibliography ......................................................................................... 121-125
   3. Wisconsin Teacher Standards ................................................................................ 126
   4. Information and Technology Program Policies ................................................... 127-150

A. INTRODUCTION

Analysis of Relevant Research and Best Practices

This synopsis of the current research on the impact of technology and library media on student achievement is grouped according to the following concepts:

1. Implementation of a robust library media program
2. Sustained systemic professional development as it relates to staff adoption and use of technology during teaching practices
3. Effective Student Use of Technology Leading to Improved Academic Achievement
4. Authentic Inquiry / Project- and Problem-Based Learning

1. Implementation of a robust library media program:

Ever since Loertscher’s Taxonomies of the School Library Media Program (1988) was published, there has been a clear understanding that a hierarchy of use is evident in library media centers and by library media center personnel. While the types and quantities of resources available have always been used as a measurement of quality, recent research efforts have revealed a meaningful picture of exactly what it is about library media centers that can be proven to affect academic achievement.

The work of Lance, Welborn and Hamilton-Pennell (1993) in the first “Colorado Study” identified the fact that indeed, the size of the library media center collection as well as the services of a school library media specialists are strong predictors of academic achievement (Scholastic, 2004/2006). The instructional role of the teacher librarian coupled with expertise in collection development led to increased academic achievement. The Second Colorado Study reported that reading scores increase with increases in specific characteristics of library media programs, including program development, information technology, teacher/library media specialist collaboration, and individual visits to the library media center. (Lance, Rodney & Hamilton-Pennell, 2000).

Subsequent impact studies have been done in sixteen other states including, Illinois (Lance, Rodney & Hamilton-Pennell, 2005), Texas (Smith, 2001), and Wisconsin (Smith, 2006), to replicate and clarify these findings. The results added weight to the hierarchy of use and level of personnel expertise. Strong academic achievement predictors found in these research results include:

- Level of library media center program development
- Opportunities for students to visit the library media center individually
- Level of staff activities related to information literacy instruction
- Availability of library media center access to electronic resources
- Support of the building leader for the library media program is critical to making it an integral part of teaching and learning.

Moreover, studies in states as dissimilar as Illinois (2005), North Carolina (2003) and New Mexico (2002) show that a strong library media program helps students learn more and score higher on standardized achievement tests than their peers in library-impoverished schools. Among the findings were (Scholastic 2006):

- Flexible scheduling is one of the hallmarks of a fully realized school library. For schools to benefit as much as possible from strong libraries, access to them needs to be as flexible as possible, enabling teachers and students to work with the library media specialist and other staff and use the library as a classroom or study space as needed. (Illinois)
- In Illinois high schools, eleventh grade ACT scores are highest when there is a high degree of true collaboration between library media specialists and classroom teachers in a wide spectrum of activities. (Illinois)
School library programs in North Carolina elementary, middle, and high schools have a significant impact on student achievement—as measured by scores on standardized reading and English tests. (North Carolina)

Scores on standardized reading and English tests in the schools included in this study tended to increase when libraries in the schools had newer books, and were open and staffed more hours during the school week. (North Carolina)

New Mexico middle schools with the highest New Mexico Achievement Assessment Program language arts scores are twice as likely as the lowest scoring schools to provide access to licensed databases via a school library network. (New Mexico)

New Mexico achievement test scores rise with the development of school library programs. (New Mexico)

Particularly noteworthy for districts seeking to close the achievement gap is the work of Stephen D. Krashen. Krashen asserts that children who live in low-income neighborhoods have little access to reading material in their public libraries, in their schools, and at home (Krashen, 2007). After investigating access to reading material in different neighborhoods, Neuman and Celano (2001) concluded that "...children in middle-income neighborhoods were likely to be deluged with a wide variety of reading materials. However, children from poor neighborhoods would have to aggressively and persistently seek them out". Krashen, therefore, strongly advocates for school and public libraries that are full of all kinds of enticing print materials at an array of levels. He further asserts that more access leads to more reading, and more reading leads to better reading, writing, spelling, grammar, and a larger vocabulary (Krashen, 2004). This means that the first step any literacy campaign needs to take is to make sure children have access to plenty of books and the place to focus is the library, both school and public (Krashen, 2007).

Clearly, the "who" and the "how" of school library media centers is central to reaping the achievement benefits of such investments. In June of 2002, a White House Conference on School Libraries (Institute of Museum and Library Services, 2002) was convened to spotlight the research that documents the value of effective school library media programs to the academic achievement of today’s children. In a period when technology solutions are touted as the answer for everything, the school library media center that incorporates modern technology while staying true to its roots in literacy and the training that enables each individual’s pursuit of knowledge and understanding wherever it might be found is a valuable component of every child’s educational experience. Such opportunities most certainly contribute to the proof of academic achievement.

2. Sustained systemic professional development as it relates to staff adoption and use of technology during teaching practices:

The 21st century education professional must be adequately prepared for the 21st century students whom they teach; therefore, educators must be self-directed cyclical learners. The professional development that they receive must carry them from learner of technology, to teacher of technology, assessor of technology, back to the learner again. Chris Dede of Harvard University states that, "Distributed learning communities should aid educational practice, professional development and the transformation of schooling to foster 21st century knowledge and skills. In particular, emerging devices, tools, media, and virtual environments provide novel ways to enable distributed learning and professional development designed to achieve the vision for educational improvement (Dede, 2004)."

The research shows that professional development is key to developing educators’ ability to use technology in a way that actually improves student achievement. "To improve education today we must do more than put technology in schools," the CEO Forum on Education and Technology said in its 1999 School Technology and Readiness Report. The CEO Forum Report stresses professional development as a tool for improved learning. The correlation between student performance and teacher professional development is high. Wenglinksky’s (1998) study, Does it Compute: The Relationship between Educational Technology and Student Achievement in Mathematics, demonstrated that teachers who did not participate in technology-focused professional development used computers for “skill and drill” which had no effect on student
成就。教师们在获得了专业发展后，能够将技术整合到提高批判性思维和其他更高阶学习技能中，并且看到了学生成就的提高。

缺乏充足的专业发展被描述为教师使用教育技术的最大障碍（Office of Technology Assessment 1995）。Seir*Tec（Seir*Tec, 2005）在《影响有效使用技术的教学和学习因素》报告中指出，当专业的培训和技术支持基于教师认为对学生有益的特定教学或学习策略时，教师通常会对新的教学策略和技术感到热情。研究建议，当技术与教师认为重要或相关的任务相匹配时，他们将接受技术。建立技术与任务之间的联系是帮助教师成为技术熟练的至关重要。

Barnett (2003) 引用了梅丁纳的四个教学技术使用阶段的理论:

**A teacher in the survival stage:**
- Struggles against technology
- Is assailed by problems (everything that can go wrong will)
- Doesn't change the status quo in the classroom
- Uses technology only for directed instruction
- Has management problems planning how to have 30 students access a few computers
- Has unrealistic expectations, believing that technology use by itself will result in higher academic performance

**A teacher in the mastery stage:**
- Has increased tolerance to hardware and software problems
- Begins to use new forms of interaction with students and classroom practices
- Has increased technical competence and can troubleshoot simple problems

**A teacher in the impact stage:**
- Regularly incorporates new working relationships and classroom structures
- Balances instruction and construction
- Is rarely threatened by technology
- Regularly creates technology enhanced instructional units

**A teacher in the innovation stage:**
- Modifies his or her classroom environment to take full advantage of technology enhanced curriculum and learning activities

“大多数今天的教育者进入教职计划教授一门特定的科目或年级。很少有人预计教授教室技术；有些人甚至不愿使用计算机进行这种教师任务，如课堂管理以及评分，”Jackson (2004) 认为。把教师从生存阶段推进到创新阶段只有通过持续的系统专业发展才能实现。这被各种策略（Sparks, 2002）支持，包括在线课程，合作在专业学习社区，面对面的工作坊和培训，跟进训练，以及结合技术的模型的指导。教师必须超越基于软件的初级技能使用，达到能够促进批判性思维和问题解决的水平。

found that students who used higher order software and whose teachers received professional development in the use of the software had positive gains in mathematics of up to 15 weeks above grade level.

The link between professional development, instructional practice and student achievement has been well established. Effective technology use, like effective teaching, must challenge and engage students. In a study that examined the relationship between computer use and students’ science achievement on a standardized assessment, Papanastasiou, Zemblyas and Vrasidas (2003) found that the computer use itself did not have an effect, but rather how the computer was used. Teachers who receive professional development are more likely to use technology beyond the foundational level, which creates stronger student engagement.

In January of 2007 the state of Wisconsin joined The Partnership for 21st Century Skills, the leading advocacy organization focused on infusing 21st century skills into education, to ensure that students develop the knowledge and skills needed for the 21st century workforce. The 21st century standards:

- Focus on 21st century skills, content knowledge and expertise;
- Build understanding across and among core subjects as well as 21st century interdisciplinary themes;
- Emphasize deep understanding rather than shallow knowledge;
- Engage students with the real world data, tools, and experts they will encounter in college, on the job, and in life--students learn best when actively engaged in solving meaningful problems; and
- Allow for multiple measures of mastery.


3. Effective Student Use of Technology that Fosters Higher Order Thinking and Leads to Improved Academic Achievement:

Technology greatly enhances teachers’ capacity to teach all students, taking multiple learning styles, intelligences and abilities into account. While many different terms have been used to describe what students need, such as digital literacy, technological literacy, and 21st century skills, there is a need for students to develop learning skills that enable them to think critically, analyze information, communicate, collaborate, and problem-solve, and the essential role that technology plays in realizing these learning skills in today's knowledge-based society. There are six areas critical to students' success in the workplace (Kay and Honey, 2005):

- Communicate Effectively: Students must have a range of skills to express themselves not only through paper and pencil, but also audio, video, animation, design software as well as a host of new environments (e-mail, Web sites, message boards, blogs, streaming media, etc.).
- Analyze and Interpret Data: Students must have the ability to crunch, compare, and choose among the glut of data now available in web-based and other electronic formats.
- Understand Computational Modeling: Students must possess an understanding of the power, limitations, and underlying assumptions of various data representation systems, such as computational models and simulations, which are increasingly driving a wide-range of disciplines.
- Manage and Prioritize Tasks: Students must be able to manage the multi-tasking, selection, and prioritizing across technology applications that allow them to move fluidly among teams, assignments and communities of practice.
- Engage in Problem Solving: Students must have an understanding of how to apply what they know and can do to new situations.
- Ensure Security and Safety: Students must know and use strategies to acknowledge, identify, and negotiate 21st century risks.
Today's students have unique needs and need to analyze complex issues and solve problems in a collaborative world. Technology can enable the development of higher order thinking skills when students are taught to apply the process of problem solving and are then allowed opportunities to apply technology in development of solutions. Milwaukee Public Schools, working with the Milwaukee Partnership Academy, identified eight characteristics of high performing urban classrooms based on research-proven best practices. The characteristics articulate the expectations for the schools and the district support to ensure that all classrooms are high performing and all students are achieving. The eight characteristics include: 1) Active engagement of student learners; 2) Cultural responsiveness; 3) High expectations based on learning targets; 4) Strategic instructional choices; 5) Routine use of a variety of assessments; 6) Partnerships with families and the community; 7) Collaboration with colleagues; and 8) Impassioned, engaged adult learners.

In a more intuitive role, technology experiences are vital to preparing students to be successful in the 21st century, an age where computer related tools have become commonplace to information exchange and communication and helps students become more engaged in the curriculum as offered through more problem-based learning in both the traditional classroom and hybrid teaching. In this role, a K-12 scope and sequence is being developed to provide Milwaukee Public Schools and classroom teachers with clear direction on the type of ongoing experiences students should have. Every student will:

- Use technology tools as a regular part of their academic program.
- Receive a continuum of training in technology skills and applications that support curriculum goals.
- Use technology in a legal and ethical manner.

Reviews of current research prove that instructional technology has great potential for improving student achievement:

- Chung, Shel, and Kaiser (2006) conducted an exploratory study of an online formative assessment and instructional tool to promote students' problem-solving and found:
  - Compared to typical discussion sessions, a large majority of respondents reported being more engaged, learning more, and interacting more with the instructor.
  - Students reported the anonymous mode allowed them to ask “dumb” questions.
  - Instructor was able to address student problems and questions immediately.
  - The amount of formative assessment information from the interaction far exceeded what was available in typical settings.

- Schacter (2005) reviewed current research on educational technologies’ impact on student achievement and reported that:
  - Students in technology-rich environments experienced positive effects on achievement in all major subject areas.
  - Students in technology-rich environments showed increased achievement in preschool through higher education for both regular and special needs children.
  - Students’ attitudes toward learning and their own self-concept improved consistently when computers were used for instruction.

The report also analyzed five large-scale studies of educational technology to determine relationships with achievement. The analysis concluded that students with access to any of the following resources showed gains in achievement on research-based tests, standardized tests, and national tests:

- Computer assisted instruction
- Integrated learning systems technology
- Simulations and software that teach higher-order thinking
- Collaborative networked technologies
- Design and programming technologies ("smart software")

- Rose and Meyer (2002) reviewed current research and found that Universal Design for Learning (UDL) takes advantage of the opportunity brought by rapidly evolving communication technologies
to create flexible teaching methods and curriculum materials that can reach diverse learners and improve student access to the general education curriculum:
- Presenting information in multiple formats and multiple media.
- Offering students with multiple ways to express and demonstrate what they have learned.
- Providing multiple entry points to engage student interest and motivate learning.

Rose and Meyer (2002) identified the following examples of how technology plays a key role:
- Technology can assist with such difficulties by enabling a shift from printed text to electronic text, which Anderson-Inman and Reinking (1998) assert can be modified, enhanced, programmed, linked, searched, collapsed, and collaborative.
- Electronic text affords alternative formats for reading materials that can be customized to match learner needs, can be structured in ways that scaffold the learning process and expand both physical and cognitive access, and can foster new modes of expression through revision and multimedia (J. Zorfass: personal communication, October 2005).

Wisconsin Teacher Standard #4 (Wisconsin DPI, 2000) states, “The teacher understands and uses a variety of instructional strategies, including the use of technology, to encourage children's development of critical thinking, problem solving, and performance skills.” To meet our curricular goals of literacy for all students, a variety of instructional strategies and technologies will be used to assist students in acquiring literacy skills in all content areas. Through the work of Marzano, Pickering and Pollock (2001) in the book Classroom Instruction that Works, it outlines nine instructional strategies that are research-based for increasing student achievement. Coupled with the use of instructional technologies, teachers can foster higher order thinking skills in students:

- **Identifying Similarities and Differences – Instructional Technology Resources**
  - Graphic Organizers
  - Power Point
  - Inspiration Software
  - Movie Editing
  - Graphics Applications

- **Summarizing and Note Taking – Instructional Technology Resources**
  - Summary Frames
  - Cornell Notes
  - Visual Representation Clues for Notetaking
  - Notestar
  - Notetaking Resources
  - Inspiration

- **Reinforcing Effort and Providing Recognition – Instructional Technology Resources**
  - Rubrics
  - Award certificates
  - Recognition on classroom or district website or newsletter
  - Recognition by e-mail

- **Homework and Practice – Instructional Technology Resources**
  - Use assistive technology devices
  - Weekly Homework Chart
  - Use a spreadsheet application to chart homework speed and accuracy
  - Post homework assignments on teacher webpage or other student information management system

- **Nonlinguistic Representations – Instructional Technology Resources**
  - Dimensional Vocabulary Model
  - Online Dictionaries
- WebQuest
- Graphic Organizers

- Cooperative Learning –Instructional Technology Resources
- WebQuests
- Word Processing
- Email
- Multimedia Projects

- Setting Objectives and Providing Feedback – Instructional Technology Resources
- Rubrics software
- Online Assessments
- Clickers, User Response Systems

- Generating and Testing Hypotheses – Instructional Technology Resources
- Historical Investigation
- Experimental Inquiry
- Problem Solving

- Questions, Cues, and Advance Organizers – Instructional Technology Resources
- Inspiration, Kidspiration
- PowerPoint or AppleWorks slide show
- Microsoft Word Tables
- Highlighters
- Partial outlines or fill-in-the-blank guides for note taking
- Webquests
- The Big 6
- Graphic Organizers
- Searching Strategies
- Anticipation Guides

As described in the research, the use of nonlinguistic representations such as graphic organizers are effective tools for supporting understanding of key concepts, and graphic representations are highly effective tools for supporting new concepts and vocabulary. Excel spreadsheet software in our math classes allows students to generate and test hypotheses quickly and efficiently. Using presentation software to organize information, coupled with using a printed copy of the presentation to assist in note-taking skills, helps students to better identify key concepts and summarize critical information. Consistent with the research, staff development goals include training in the use of related applications (PowerPoint, Excel, Inspiration).

Wisconsin Teacher Standard #3 (Wisconsin DPI, 2000) states, “The teacher understands how pupils differ in their approaches to learning and the barriers that impede learning and can adapt instruction to meet the diverse needs of pupils, including those with disabilities and exceptionalities. Technology plays a critical role in being able to differentiate and individualize instruction (Ohler, 2001).

Virtual learning in particular is emerging as one of the most effective vehicles for delivering differentiated instruction and closing the achievement gap. While there is a relative lack of extensive research on the role of virtual learning on at-risk populations, a small number of studies show significant results. For example, The Center for Children and Technology found that deep and sustained access to technology has given Hispanic students from low-income families “a substantial leg up,” significantly increasing their test scores in writing and mathematics (Chang, et al., 1998). Virtual education can create an environment in which, “Every student could have an individual education plan tailored to her or his skill level, aptitude, interest, maturity, talent, and mental acuity (Warren, 2001).
Technology is particularly suited to supporting educators’ efforts to address the great variances in students’ learning styles, aptitudes and ways of comprehending instructional material. The following summary of Gardner’s (1983) groundbreaking work about multiple intelligences and multi-media are particularly relevant when we consider the relationship between student achievement and teaching practices and the role of technology in creating optimal learning opportunities for each student.

Multimedia and Multiple Intelligences

- Seven or more "multiple intelligences" that are of equal importance in human beings and develop at different times and in different ways in different individuals.
- Multi-media can go along way to addressing these intelligences, much more than traditional teaching methods.

4. Authentic Inquiry / Project- and Problem-Based Learning

MPS employs research-proven practices by encouraging teaching and learning through project-based, inquiry, and problem-based units of study. Project-based learning allows students hands-on exposure to real world problems, utilize their strengths and apply multiple intelligences. Students are actively involved in all steps of the learning process, from choosing what they are interested in exploring to self-assessment of their procedures and products. This constructivist method of learning is well supported by the research of Howard Gardner and David Perkins and their work with Project Zero at Harvard University, longstanding research project that seeks to improve assessment, content and pedagogy. Project-based learning also allows for students to utilize their strengths, enhancing each students’ multiple intelligences, also supported by the work of Gardner. “Research indicates that hands-on, inquiry-based instruction is generally more effective than traditional didactic presentation in improving students problem-solving abilities in particular subject domains (Helgeson, 1992)."

When engaging in inquiry, students describe objects and events, ask questions, construct explanations, test those explanations against current knowledge, and communicate their ideas to others. They identify their assumptions, use critical and logical thinking, and consider alternative explanations. This method of learning helps students actively develop their understanding of concepts by combining knowledge with reasoning and thinking skills. It also gives them the opportunity to receive accurate feedback directly from the outcomes of their own inquiry.

Problem solving or problem-based learning is a form of learning that involves the construction of meaning in contrast to forms of learning that involves the transfer of meaning. Here the teacher facilitates students’ solving of problems. The process of learning through inquiry has many parallels with the problem-solving process in which students pursue their own questions, seek to discover answers themselves, instead of receiving them from others. Group learning is frequently embedded in the process of group problem solving or inquiry. Inquiry and problem-based learning allow the students to take more responsibility for the learning process. The teacher serves as the facilitator, guiding the process of learning via these approaches (Farquharson, 1995).

Technology promotes teaching and learning in the project-based, inquiry, and problem-based methods, and increases access to knowledge. Computer-based technologies can be powerful pedagogical instruments, creating environments for collaboration to support learning. Technology resources for education—whether a software science simulation or an interactive reading exercise—function in a social environment, mediated by learning conversations with peers and teachers. (National Research Council, 2000) Technology can help to create an active environment in which students not only solve problems, but also find their own problems. Technology supplements or redresses students’ lack of opportunity for having concrete learning experiences by offering virtual field trips, laboratory simulations, real world use of applications, data manipulation, and multimedia presentation software and equipment. Advanced tools allow access to video-based problems and electronic communication systems that connect classrooms with communities of practitioners in science, mathematics, and other fields (Barron & Goldman, 1994).
MPS has broadened the reach of project-based learning over the past several years through the implementation of key new classroom initiatives. The nationally recognized best practice in STEM (science, technology, engineering and math) education, Project Lead The Way (PLTW) is now running in 13 MPS schools (Walcerz, 2006). Students in five high schools and eight K-8 or middle schools engage in pre-engineering classes that integrate a career program with rigorous academics in a hands-on project based environment. Students build robots, race dragsters, build complex “Rube Goldberg” style machines, solve puzzles, and more. PLTW utilizes collaborative learning methods with students working in teams to solve problems. MPS is the only site among 1,800 school districts working in PLTW that offers bilingual sections of the program. In addition, active business partnerships assist the teachers in bringing real world experiences into the classroom.

MPS is also home to several National Academy Foundation academies. NAF is another nationally recognized, highly successful model for project-based learning. The district has four NAF academies, including the Academy of Information Technology at Washington High School of Information Technology. NAF provides research tested and standards based curriculum and supports teachers with intensive professional development. Several MPS schools that are in the process of restructuring into small learning communities are investigating the NAF model for their sites.

The Dell TechKnow project employs authentic inquiry-based learning through the hands-on lessons students work on in order to earn a personal computer. Students in grades six through eight learn basic hardware by taking the computer apart and removing and replacing components. Successful completion of the curriculum includes software and Internet usage. Other instructional technology programs in schools that use problem-based learning methods include certification programs in MOS (Microsoft Office Specialist) and A+.

The inquiry-based model of learning is used through much of the technical course programming in MPS. The Lynde and Harry Bradley Technology and Trade School employs inquiry-based learning throughout its four academies. Students in classes from architecture to robotics, from digital electronics to media technology, must approach their coursework to solve real world problems. What is at stake is not whether the student is right or wrong, but whether the student can think through the problem, work with a team of other students to apply their knowledge in a concrete setting, and work their way collectively to a solution.

After school teams in several MPS high schools utilize this approach in the FIRST Robotics competitions. Other middle school aged students use problem-based learning to compete in the Future Cities Competition hosted by Engineers and Scientists of Milwaukee. Still other high school students compete in the Rube Goldberg regional competition. Even at the elementary school level, groups of students engage in project-based learning with technology. Notably, 20 elementary schools explore the world of aviation technology through projects with the Experimental Aircraft Association in Oshkosh.

MPS will continue to increase its use of an online learning environment to support student learning. Project-based learning and online learning share many of the same tenets. In both online learning and project-based learning, instructors facilitate and support learning rather than provide direct instruction. Like project-based learning, many online learning experiences incorporate some kind of authentic tasks or assessments, which motivates students (Haight, Kelly & Bogda 2005).

MPS will be implementing e-Portfolios in its online learning environment (Moodle). Frank and Barzilai (2004) suggested that traditional assessment strategies are not appropriate for gauging the goals of project-based learning courses. As an alternative assessment type, the portfolio method is widely used for project-based learning. An e-portfolio is the compilation of portfolio items stored in electronic formats such as audio-visual, graphical or text. Project-based learning, being learner-centered and authentic, can be associated with performance evaluation with e-portfolio assessment strategies (Read & Cafolla, 1999). Among many features of e-portfolio assessment, “the demonstration of critical thinking through reflective writing about artifact construction, selection, and revision” is the most important aspect (Lynch & Purnawarman, 2004, p 51).
Summary of Technology Research

Some of the major implications of recent research about teaching, learning and student achievement for a long-term strategic plan are:

- A robust school library media program is a critical component in improving student achievement.
- Sustained professional development is the key to improving teachers’ ability to integrate technology in their instruction in a way that significantly impacts student achievement.
- Ongoing technology support for teachers in the form of mentoring, modeling and sharing best practices increases the likelihood that teachers will use technology effectively.
- Students who are able to use technology beyond the foundational skill level are more engaged, demonstrate achievement gains, and develop multiple intelligences.
- Computers in classrooms may have greater impact on student achievement than solely lab-based computer use.
- Use of research-based instructional strategies and technology resources to support student achievement will aid the district in closing achievement gaps.
- Technology plays a critical role in being able to differentiate instruction. Online learning is an effective vehicle for delivering instruction.

Technology has the potential to improve student achievement and engagement in learning. This potential is largely based on the skill and comfort of instructional staff, which is supported by sustained professional development.
District Strategic Plan

In 2006-07, the Milwaukee Public Schools, the Milwaukee Teachers’ Education Association – with the Greater Milwaukee Committee’s support – joined together to focus the greater Milwaukee community on higher expectations for student achievement through the development of a five-year strategic plan. From October 2006 through February 2007, over 45 community input sessions were held and attended by over 1,000 individuals. During this process, over 3,000 suggestions were received on what the district should stop doing and about 6,000 suggestions were received on what the district should start doing. A team of individuals, including teachers, principals, and central services staff members was convened to develop the draft strategic plan. The content of the draft plan was written based on: 1) the input gathered during the stakeholder sessions, 2) research and best practice in highly effective and strategically aligned urban school systems that produce improved results for students, and 3) the professional expertise and knowledge of the conditions unique to the Milwaukee community. The draft plan was released for public input in mid-April 2007. Eleven stakeholder meetings and public input sessions were held and input was also received via online submission. A total of 371 individuals participated during the second round of input.

In June and July 2007, representatives from the African American Education Council, MPS Administration, MPS Board of School Directors, Milwaukee Teachers’ Education Association and the Greater Milwaukee Committee met to discuss key strategic planning for Milwaukee Public Schools for the next five years and beyond. The discussions made clear that all of these entities share the same vision relative to supporting the academic achievement and future success of Milwaukee Public Schools students. This collaboration resulted in a plan that reflects and incorporates the shared vision. The strategic plan, “Working Together – Achieving More: Action Plan to Improve Milwaukee Public Schools 2007-2012,” was approved by the Milwaukee Board of School Directors on July 26, 2007.

Vision and Mission

The Milwaukee Public Schools’ vision, mission, goals, and core beliefs are stated below.

Vision:
Milwaukee Public Schools will be among the highest-performing urban public school districts in the country, providing rigorous, high-quality learning opportunities for students. Schools will enable lifelong learning among students, families, educators and other staff focused on continuous improvement. Teaching will be child-centered, based on research-proven methods, and aligned to high academic standards; it will meet the learning needs of individual students. The district, its schools, and its employees will be accountable for measurable gains in student achievement.

Schools will be safe centers of community activity that are welcoming, well maintained, and accessible. Children will be provided maximum educational opportunities to become responsible citizens who make positive contributions to their communities. The district and its schools will strengthen partnerships with families and those in the community who influence and affect students and families.

Mission:
Milwaukee Public Schools educates all students for success in higher education, careers and responsible citizenship so that MPS is the first choice for families.

Strategic Areas and Goals

The district’s five-year strategic plan includes three broad strategic areas and eight goals along with measurable objectives and key outcome measures for each of the goals.
I. Student Success Through Academic Achievement

**Goal 1:** Students meet or exceed Wisconsin academic standards and graduate prepared for higher education, careers and citizenship.

II. High-Performing Schools and Classrooms

**Goal 2:** School communities work together for improvement in academic achievement.

**Goal 3:** Leaders and staff demonstrate continuous improvement through focused professional development.

**Goal 4:** School staffs are accountable for high quality teaching and learning, measurable gains in student achievement and fiscal responsibility.

**Goal 5:** School staffs are supportive and responsive to students and families.

III. District and Community Support

**Goal 6:** The district is accountable for measurable results.

**Goal 7:** The district’s central services departments support student learning.

**Goal 8:** The district builds partnerships to support student achievement.

Core Beliefs:
1. Children Come First
2. The Classroom is the Most Important Place in the District
3. Leadership and Accountability are Keys to Our Success
4. Central Services Supports Student Achievement
5. Families are Valuable Partners
6. Community Partnerships Add Value

Six School Capacity Builders:
The *Information and Technology Strategic Plan* supports the district’s priorities established to build capacity for continued improvement at individual schools and at the district level. The Superintendent identified the following six capacity builders to ensure that high quality education is the standard in all schools and to ensure that student achievement continuously improves and that the gap in achievement closes across subgroups of students and between the district and the state:

1. Schools should have a school-wide instructional focus chosen from the Characteristics of a High Performing Urban Classroom;
2. Schools function as professional learning communities;
3. Schools practice shared decision making;
4. Schools develop and implement effective education plans;
5. Schools align curriculum, assessment, and instruction; and
6. Schools are managed in a fiscally responsible way.

Information and Technology Literacy Vision:
Technological literacy creates the foundation upon which communications, interaction, learning and innovation happen in today’s increasingly sophisticated world. Technology is an extension of human capability, which empowers the learner and the systems they interact with. Milwaukee Public Schools uses technology to enable students and staff to become self-directed and efficient learners, allowing them to engage comfortably and knowledgably in a world built and dependent on technology.

Information and Technology Mission:
Promote technological literacy as an essential and basic component of education for all MPS stakeholders, through teaching, learning and business operations.
Alignment with District Strategic Plan

The Information and Technology Strategic Plan is aligned with the district’s five-year strategic plan, which includes the following research-proven best practices:

Strategic Area I - Student Success Through Academic Achievement

- **Learning Targets** – Learning Targets have been established based on Wisconsin State Standards for each of nine content areas at each grade level so that teachers know what is to be taught and parents and students know what students are expected to learn. The Learning Targets serve as the foundation for the Curriculum Alignment Process. As a part of the educational planning process, each school is held accountable for the curriculum alignment process ensuring coordination of the Learning Targets, classroom assessments based on standards, and instruction in the classroom. Titles I-A, II-A, II-D, and III-A funds provide support in this process. (Stiggins, 2001; Barnett, 2003; American Federation of Teachers, 2001; Kauffman, Johnson, Kardos, Liu, & Peske, 2002)

- **Comprehensive Literacy and Mathematics Frameworks** – The research-based frameworks serve as guides for teaching and learning literacy across all subject areas and challenging mathematics. The Comprehensive Literacy Framework provides a balance of skill development and literacy-rich activities that include reading, writing, listening, speaking, and the use of language technology and research skills while learning all other subjects. It serves as the guide for all content area instruction, instructional support, and supplemental services. (National Reading Panel, 2000; National Reading Council, 1998; American Federation of Teachers, 1999)

  The Comprehensive Mathematics Framework is represented by a cycle that revolves around the Wisconsin content standards of numbers, algebra, statistics, probability, geometry, measurement, and their interconnections. The components of mathematical proficiency that drive classroom practice include: understanding, computing, reasoning, applying, and engaging. The literacy and mathematics frameworks provide tools to help teachers further shape literacy-focused activities with the goal of every student performing at or above grade level. The Milwaukee Mathematics Partnership is supported through a five-year, $20 million grant from the National Science Foundation. The math partnership project targets student mathematics achievement in MPS and student transition to higher education. An Institutions of Higher Education Mathematics Network consisting of two- and four-year colleges and universities focuses faculty on the mathematical preparation of teachers. Key courses in the preparation of teachers, both in mathematics and education, are being redesigned or created to strengthen the mathematics content knowledge of teachers. (National Research Council, 2001a, 2001b, and 2002; Ball & Bass, 1999; National Council of Teachers of Mathematics, 2000; Wenglinsky, 1998)

- **Student Engagement in the Learning Process** – Every School Identified for Improvement (SIFI), supported by their district-level technical assistance team, undertakes a comprehensive examination of the teaching practices, student-learning experiences, and teacher-student interactions incorporated in each school’s classrooms. Utilizing the Instructional Practices Inventory, priority is given to looking at students’ active engagement in the learning process, collaborative learning among students and teacher-student collaboration, interdisciplinary approaches to teaching and learning, and use of instructional technology wherever appropriate to enhance the learning process. (National Association of Student Personnel Administrators, 1998)

- **Health and Wellness** – Providing health services for children and families is a priority for the Milwaukee Public Schools. The district is expanding partnership relationships with health care providers and community-based organizations and is seeking private grant funding to support the health, vision and dental care of eligible students. Title I funds are being used to expand the number of school nurses, psychologists, and social workers that support the health and wellness needs of students and contribute to increase achievement. (Maughan 2003; Allen 2003; Wyman 2005)
High School Redesign – Through funds from the Bill and Melinda Gates Foundation, MPS is undertaking, along with community partners, a major high school redesign initiative to significantly improve the graduation rate and expand opportunities for students after graduation. Through the high school redesign efforts, MPS is providing diverse options for high school students including traditional comprehensive high schools, large high schools organized into small learning communities, and small high schools. Since the fall of 2003, 23 small high schools have opened, four are scheduled to open in the fall of 2007, and four are in the planning stage to open in the fall of 2008. Thus far, two large comprehensive high schools have been transformed into small learning community high schools using the First Things First Framework. (Howley, Strange, & Bickel, 2000; Barth, Haycock, Huang, & Richardson, 2000; Levine, 2001) MPS is also providing additional instructional opportunities for high school students to gain credit towards graduation and increase the graduation rate. (Murphy, Beck, Crawford, Hodges & McGaughy, 2001; Cotton, 2001; Deutsch, 2003)

Science, Technology, Engineering and Math (STEM) – The district’s initiative to strengthen Science, Technology Engineering and Math as a focal point for learning for children is MPS comes at a time when increased pressure from global competition and high technology is shaping the opportunities in the workplace. The US Department of Labor estimates that well over 70% of the jobs in the national workforce are clusters in STEM occupations. The students of MPS need a strong foundation in these technical fields to be able to compete in today’s world. A collaborative began in November 2004 to strengthen and motivate MPS students K-12 in science, technology, engineering, mathematics, and related careers. Approximately 40 business corporations, community organizations, foundations, colleges, universities, and others are a part of the MPS STEM Partnership Team. (National Science Education Standards; Wisconsin Model Academic Standards for Science, 1998; National Science Resources Center, 2000)

Strategic Area II – High-performing Schools and Classrooms

Characteristics of a High Performing Urban Classroom – Milwaukee Public Schools, working with the Milwaukee Partnership Academy, identified eight characteristics of high performing urban classrooms based on research-proven best practices. These characteristics articulate the expectations for the schools and the district support to ensure that all classrooms are high performing and all students are achieving. The eight characteristics include: 1) Active engagement of student learners (DuFour and Eaker, 1998); 2) Cultural responsiveness (Cochran-Smith, 2004); 3) High expectations based on learning targets (Zemelman, Daniels and Hyde, 2005)); 4) Strategic instructional choices (Marzano, 2003; Van Seiver, 2005); 5) Routine use of a variety of assessments (Stiggins, 2004); 6) Partnerships with families and the community (Epstein & Salina, 2004); 7) Collaboration with colleagues (DuFour & Eaker, 1998); and 8) Impassioned, engaged adult learners (Hammerness, Darling-Hammond & Bransford, 2005).

Aligned Curriculum, Assessment and Instruction – Curriculum alignment is bringing together curriculum, instruction and assessment in MPS schools. It coordinates the Learning Targets (what students are expected to learn), classroom assessments based on standards, and the instruction in the classroom. (Marzano, 2003; Frederiksen and Connins, 1990; Marzano, 2001; English and Steffy, 2001)

Literacy Coaches and Math Teacher Leaders – Most schools have a Literacy Coach that coordinates the efforts of staff around the literacy model and engages teachers in job-embedded professional development, particularly newly hired teachers to ensure success for all students. Beginning in 2006-07, some schools were provided the option of having a curriculum generalist and some schools with high reading achievement have opted to have a full-time math teacher leader. Title I-A, II-A, and V-A fund school and district-level staff to support teaching and learning of academic standards across all content areas. MPS schools identified a teacher to serve as a Math Teacher Leader to provide support
School Learning Teams – Each school is expected to have a learning team composed of individuals from the school community who are selected and prepared to collect and interpret data to inform the school’s educational school improvement plan, provide support to teachers, enable embedded professional development at the school site, and help create positive conditions for continuous teacher and student learning. Learning Teams ensure that each school’s educational school improvement plan is data driven, that the curriculum is aligned with standards and assessments, that school-based decision making is a shared responsibility, that a climate exists to support a professional learning community, and that the school demonstrates fiscal responsibility. (Sparks, 2002; DuFour, 1991; Dede, 2004; Killion, 2002a, 2002b; Joyce and Showers, 2002; Barron and Goldman, 1994)

Effective Education School Improvement Plan – Each school designs an educational school improvement plan that focuses on the school’s effort to improve student achievement for all students, including students with disabilities. Goals and objectives detailing instructional strategies and performance measures are tied to a comprehensive, data driven needs assessment. Involvement of the stakeholders in the development and ongoing review and adjustment of the educational school improvement plan is a critical expectation set for each school. (Efficacy Institute, 2001; DuFour, 1991; DuFour and Eaker, 1998; Farquharson (1995)

Professional Learning Communities – A school functions as a professional learning community when all of its stakeholders demonstrate a shared mission, vision and values, and participate in collective inquiry and collaborative teams with an orientation toward action and research, a commitment to continuous improvement, and a clear focus on results. The district conducts active observations in classrooms called learning visits focused on student engagement and instructional strategies. The consolidated improvement plan provides support for districtwide and embedded professional development to ensure effective professional learning communities in schools. (DuFour, 1998; Sparks, 2002; National Research Council, 2000; Barron and Goldman, 1994)

Shared and Decentralized Decision Making – MPS schools must implement shared decision making to improve school effectiveness and student learning by increasing staff commitment and ensuring that schools are more responsive to the needs of their students and community. Teachers, parents, school staff and the community have more say about policies affecting their schools and children’s success. MPS has been operating with budget decentralization since the mid 1990s and budget decentralization has expanded substantially since 2001. Currently, allocations to schools account for over 90% of the school operations budget, placing resources in classrooms and schools—the most important place in the district. Schools make decisions on how to spend their allocations based on needs identified in their educational school improvement plans. To fund central services and programs, schools are required to allocate a portion of their budgets to "chargeback costs." They also have the option to fund additional services through "buyback" choices.

Principal Leadership and Accountability – MPS principals are supported with a coach who visits or calls weekly and is trained in listening, inquiry, and leadership skills. Principal coaches assist principals in setting goals and developing action plans by offering honest feedback and observations. In addition, an evaluation system was developed with input from community leaders and principals and is being implemented to hold principals accountable for results. (Fullan, 1999; Stacey, 1996; Lambert, 1998; Glickman, 2002; Barth, 1990; Sparks, 2002; Pierce and Stapleton, 2003; Brush, Armstrong, Barbrow, Ulintz (1999) A Concentrated Assistance Program provides support for administrators requiring intervention to create significant and sustained improvement in performance. (National Association of Elementary School Principals, 2002; Marzano, 2003)
MPS supports school leadership and accountability through the principal institute where principals and teacher leaders attend monthly professional development programs to enrich and enhance skills to transform staff to be dynamic instructional leaders. In addition, an intensive two-day summer institute is conducted for school leadership teams.

Principals engage in monthly professional development sessions. During the 2006-2007 school year, the focus was instructional leadership. The sessions were held once every month and convened all day. The format of the sessions was a professional learning community with the same cohort and facilitators each time. The use of technology has been integrated into the delivery system of the sessions. Video, PowerPoint, use of e-mail with participants, and electronic data collection tools have been integrated into the learning experience. Many of the examples of classroom practice reviewed by the participants featured students using technology. These technology-rich examples are available on video as a result of work done by several previous technology efforts: Replicable Schools, Technology Literacy Challenge Fund, and Preparing Tomorrow’s Teachers to Use Technology.

Principals were required to attend a series of professional development sessions at the start of the 2006-2007 year. Two of the sessions directly support the goals of the Information and Technology Strategic Plan. First of all, the district library media specialists were introduced and afforded the opportunity to address the principals and school leaders in an opening session. They were able to emphasize the role of the library media specialist in the schools, and reinforce the available electronic resources to support student learning. The second session was designed to support the role out of the document Characteristics of a High Performing Urban Classroom. This session emphasized how to locate resources that support best practice using the MPS Portal.

MPS is one of five urban districts in Wisconsin participating in the Wisconsin Urban Schools Leadership Project funded by The Wallace Foundation. This school leadership partnership project involves the Governor, the Wisconsin Department of Public Instruction, the University of Wisconsin-Madison, the University of Wisconsin-Milwaukee, Cardinal Stritch University, the Association of Wisconsin School Administrators, and the Milwaukee Partnership Academy. The project will help to recruit, develop and retain teachers and principals of color – furthering diversity in the ranks of Milwaukee's teachers and principals. The project will improve student achievement by implementing standards for licensure of school principals at the master level and by forming active professional networks sharing the goal of improving student achievement.

- **Optimizing Success Through Problem Solving (OSPS)** – OSPS supports the school reform efforts of MPS through direct school support and training, as well as, through related district level professional development. Founded on the problem-solving model and prevention theory, OSPS provides schools with a data based decision-making process at the prevention (school-wide) level, early intervention (classroom) level, and focused intervention (individual student) level. A team of problem-solving facilitators uses a combination of embedded staff development opportunities and structured workshops to support school based professional learning communities. Within the larger context of educational reform, problem solving becomes a vehicle for change in areas of academic achievement, school climate, and student social competency. School staff, students, and parents learn practical interventions for students that are coupled with efficient ongoing progress monitoring methods. (Canter, 2004; Staum, M. and Ocampo L. (2004) National Association of School Psychologists, Principal Leadership Magazine, [http://www.naspcenter.org/principals/nassp_probsolve.html](http://www.naspcenter.org/principals/nassp_probsolve.html))

**Strategic Area III – District and Community Support**

- **Performance-based Budgeting through the Integrated Resource Information System (IRIS)** – MPS and the Wisconsin Center for Education Research have submitted a proposal to the U.S. Department of Education to fund a four-year project to build a comprehensive integrated resource information system (IRIS). IRIS will modify the MPS budget system so it is more effectively linked to outcomes and cost-effectiveness. IRIS will also make it possible to evaluate district resource use initiatives.
IRIS will provide the kind of micro-detail currently not available in any standard state or district data system. It will allow MPS to determine in a systematic way “what works” to facilitate student achievement at the student (e.g., tutoring, courses), classroom (e.g., content taught, class size), and school (e.g., size, extent of professional community, use of instructional coaches) levels. Data on professional development within MPS is not now tracked in a systematic way, and the first phase of IRIS will be to implement a system to do this. Subsequent phases will expand the existing data warehouse system to store and provide access to data on resource use related to student achievement.

The district’s 2007-08 budget includes performance measures for central services departments and divisions; performance measures for schools will be part of the 2008-09 budget. Full implementation of the performance-based budgeting model through the IRIS system will track and report progress toward the goals of the strategic plan; provide a process for reviewing and updating its goals and objectives; and link available resources to support attainment of the goals. Performance-based budgeting will result in higher levels of accountability for those charged with the responsibility of improving student achievement.

- **Accountability** – The district annually publishes a report card detailing overall and school-by-school achievement, attendance, and demographic data. School Climate Survey data of students, parents, and staff is also published annually. Central services evaluates school performance to ensure early intervention when appropriate. The district provides increased flexibility and autonomy in areas such as curriculum, innovative strategies, budget, staff, and administrative evaluation to high-performing schools. The district provides targeted support and prescriptive interventions in areas such as curriculum, budget, staffing, and administrative evaluation to low-performing schools. The evaluation system for central services staff ensures adherence to district standards, provides support and interventions to improve performance and holds employees accountable.

- **Partnerships that support student achievement** – The district and schools collaborate with businesses and community organizations to provide educational and recreational activities for students and families; to use schools as gathering places and activity centers for community groups; and to involve businesses and community organizations in teaching and learning activities during the school day. The district and schools work with community-based, non-governmental and law enforcement organizations to enhance and support the district’s anti-violence, anti-drug and cultural sensitivity programs for students, families and school communities. The district and schools collaborate with business partners to provide students with mentors, internships and pathways to future employment. The district is also collaborating with the Milwaukee Partnership Academy and the Metropolitan Milwaukee Association of Black School Educators on targeted strategies focused on closing the achievement gap.

The diagram on the following page represents the alignment of the district’s strategic plan to the Information and Technology Strategic plan.
Alignment of Information & Technology Strategic Plan to District Priorities

MPS Strategic Plan + School Education Plans + Information & Technology Strategic Plan Framework = Increased Student Achievement

MPS Strategic Plan
- Educational Reform at the District Level
- Building Capacity for Success at the School Level
- Strengthen The Technology Foundation

Information & Technology Strategy Plan Framework

School Education Plans
- School-Wide Instructional Focus
- Professional Learning Communities
- Shared Decision-Making
- Effective Education Plans
- Aligned Curriculum, Assessment & Instruction
- Fiscal Responsibility

Schools
- Educational Reform at the District Level
- Building Capacity for Success at the School Level
- Strengthen The Technology Foundation

MPS Strategic Plan
- Increased Student Achievement

Information and Technology Strategic Plan
- NCLB
- E-Rate
- WI State Statutes
- WI ED Tech Plan
- Other

REGULATIONS, RESEARCH & BEST PRACTICES
- NEEDS ASSESSMENT
- DISTRICT CORE BELIEFS

MONITOR PROGRESS & DISSEminate INFORMATION
- IMPLEMENTATION ACTION PLAN – Goals, Objectives, Activities

EVALUATE / FEEDBACK / REVISE
- STRATEGIC PLAN, POLICIES, PROCEDURES, STANDARDS
The table below provides examples of the Information and Technology strategies aligned to the district’s strategic plan and improvement strategies.

<table>
<thead>
<tr>
<th>District Strategic Areas</th>
<th>MPS Research-Proven Strategies (to improve achievement and close achievement gaps)</th>
<th>Information &amp; Technology Strategies Aligned to District Strategic Plan (Examples)</th>
</tr>
</thead>
</table>
| **Student Success Through Academic Achievement** | - Learning Targets Aligned To Wisconsin Academic Standards  
- Comprehensive Literacy  
- Comprehensive Math  
- High School Redesign  
- Optimizing Success Through Problem Solving  
- Performance And Formative Assessments  
- Classroom Assessments Based On Standards  
- Benchmark Assessments  
- Before And After-School Programs And Recreation Programs  
- Project Lead The Way, National Best Practice In STEM Education | - Alignment of the technology skill sets with the MPS Learning Targets  
- Educator approved and grade level appropriate Internet sites  
- Age-appropriate technology to acquire and express information; communicate, career planning, artistic expression, stimulate thinking, problem solving  
- Age-appropriate technological alternatives or supplements to face-to-face instruction, i.e., virtual schools, electronic textbooks, access to an online learning community  
- Information technology and technical education programs  
- Online assessment programs  
- Technology to support project-based learning  
- Use of technology to support differentiated instruction  
- Virtual library tools  
- Centralized enterprise library and media automation system  
- 1:1 laptop project for anytime, anywhere learning  
- Web-based software and resources to support technology proficiency of students  
- Online delivery of WKCE  
- Electronic portfolios for student work  
- Video content in the classroom  
- Video conferencing  
- Digital Inclusion for MPS families  
- Dell TechKNow computer literacy program for middle school age students  
- Access to technology and assistive technology tools for students with special needs and English language learners |
| **High-Performing Schools and Classrooms** | - Characteristics Of A High Performing Urban Classroom  
- Aligned Curriculum, Assessment, And Instruction  
- School Educational Plans  
- Literacy Coaches  
- Math Teacher Leaders  
- Literacy And Math Specialists At District Level  
- School Learning Teams  
- School Governance Councils  
- Consistent School-Wide Implementation Of Research-Based Practices  
- Data-Driven Needs Assessment  
- Measurable Goals And Objectives  
- SIFI Improvement Plan  
- Special Education Compliance Plan  
- Instructional Strategies And | - MPS online teaching and learning resources, i.e., Curriculum Alignment Resource Guide, Effective Practices Directory, Model Classroom Assessments Based on Standards  
- Model and facilitate the use of technology to support differentiated instruction  
- New teacher training and support  
- Use of technology tools for instructional management  
- Varied methods of technical and functional technology training and support  
- Action Plan to Improve Milwaukee Public Schools available on MPS Portal  
- MPS Portal  
- The Learning Community, Student Learning Community--Moodle  
- Curriculum Design Assistant  
- Virtual Induction Program, Professionals Revitalizing Online  
- Email; Listservs |
<table>
<thead>
<tr>
<th>District Strategic Areas</th>
<th>MPS Research-Proven Strategies (to improve achievement and close achievement gaps)</th>
<th>Information &amp; Technology Strategies Aligned to District Strategic Plan (Examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Performance Measures</td>
<td>- Text Net</td>
</tr>
<tr>
<td></td>
<td>- Professional Development Plan</td>
<td>- Parent Link messaging system</td>
</tr>
<tr>
<td></td>
<td>- Family Literacy And Tutoring</td>
<td>- Help Desk</td>
</tr>
<tr>
<td></td>
<td>- Parent Resource Centers</td>
<td>- eSIS electronic gradebook and report card</td>
</tr>
<tr>
<td></td>
<td>- Parent Organizations</td>
<td>- Student Proficiency System</td>
</tr>
<tr>
<td></td>
<td>- Parent Communication And Resolution System</td>
<td>- Administrator Data Dashboard</td>
</tr>
<tr>
<td></td>
<td>- Professional Learning Communities</td>
<td>- Special Services Information Management System</td>
</tr>
<tr>
<td></td>
<td>- Embedded Professional Development</td>
<td>- School Educational Plans available on MPS Portal</td>
</tr>
<tr>
<td></td>
<td>- Principal Coaches</td>
<td>- MPS Data Warehouse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Educator Data Warehouse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- School Climate Surveys</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Parent access to teaching, learning, and other information resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- MPA Family Reports</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- eSIS Parent Assistant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Parent and community access to MPS Portal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Support tutoring and family literacy priorities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Professional development on use of on-line tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Assistive Technology tools to support struggling students</td>
</tr>
<tr>
<td></td>
<td>District and Community Support</td>
<td>- Community-wide Cable broadcasts of teaching and learning practices</td>
</tr>
<tr>
<td></td>
<td>- Accountability Systems</td>
<td>- Electronic portfolios for teachers</td>
</tr>
<tr>
<td></td>
<td>- Performance-Based Budgeting</td>
<td>- On-line courses for graduate credit</td>
</tr>
<tr>
<td></td>
<td>- Partnership Support</td>
<td>- Phone Link system</td>
</tr>
<tr>
<td></td>
<td>- Resources Aligned To Support Student Achievement</td>
<td>- Online professional growth registration and recording system</td>
</tr>
<tr>
<td></td>
<td>- Neighborhood Schools Initiative</td>
<td>- Instructional Technology Leaders</td>
</tr>
<tr>
<td></td>
<td>- Budget Aligned To Educational Plans</td>
<td>- Teacher Probes to inform instruction</td>
</tr>
<tr>
<td></td>
<td>- Implementation Of Research-Proven Practices</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Research And Evaluation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District and Community Support</td>
<td>- Action Plan to Improve Milwaukee Public Schools</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Integrated Resource Management System (IRIS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- School Educational Plans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- MPS Learning Targets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- School Climate Surveys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- MPS Data Warehouse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- MPS Library Automation System</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Secure networking and operating environment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Strategies to improve interoperability and integration among core district business applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- IFAS financial management system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Peoplesoft – employment data management system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Maintain desktop hardware standards and establish software standards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Equitable access to information resources and technology tools</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Establish minimum standards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Wireless network – Wi-Max Infrastructure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Approved and grade level appropriate Internet sites for students and parents</td>
<td></td>
</tr>
</tbody>
</table>
B. BACKGROUND INFORMATION

School/Community Demographics
The City of Milwaukee, Wisconsin, is located on the western shore of Lake Michigan in southeastern Wisconsin. Milwaukee is the hub of the metropolitan area and a thriving place to live and work. Milwaukee is Wisconsin’s largest city with a population of 596,974 and is the principal trade, service and financial center of southeastern Wisconsin. Milwaukee has long been considered the financial, cultural and economic backbone of southeastern Wisconsin. According to the 2000 U.S. Census, 11.2% of Milwaukee’s households earn less than $10,000 per year; 20.6% earn between $10,000 and $24,999; 32.1% earn between $25,000 and $49,999; and 36% earn over $50,000. A significant number of children in Milwaukee live in poverty. The percent of families with related children under the age of 18 years with poverty status totals 25.7%. This percent increases to 42.9% for families with female-headed households. For the greater Milwaukee metropolitan area, the percent of persons living below poverty is 10.6%. The ethnic composition of the City of Milwaukee is 54.6% compared to 38% for Milwaukee County, and 12.8% for the State of Wisconsin. Milwaukee became a minority majority city during the 1990s. The City of Milwaukee unadjusted unemployment rate reported in June 2007 was 7.9%, compared to 5.7% for the Milwaukee-Waukesha-West Allis metropolitan area, 5.0% for the State of Wisconsin, and 4.5% for the United States.

Milwaukee Public Schools was incorporated as a public school district in February 1846. It is the 29th largest school district in the nation and the largest school district in Wisconsin. MPS is a large urban decentralized school district serving over 90,925 students with about 10,000 educators, administrators and other staff in over 200 locations. MPS demographics reflect the following diversity: 57.8% of the students are African-American; 21% Hispanic; 12.8% White; 4.4% Asian; 0.9% Native American; and 3.1% other non-White. About 16.6% of the students have identified special education needs and 6.6% of students have limited English proficiency. District wide, over 75% of the students are eligible for free or reduced price lunch, an indicator of the number of children living in poverty. Individually, 36 schools have free or reduced lunch rates over 90% and half of the 171 regular school sites have rates over 80%.

Student Achievement Data
Parents in Milwaukee have a wide variety of school choices for their children, including traditional public schools, public MPS charter schools, private and parochial schools, Milwaukee Parental Choice schools, and charter schools operated by the City of Milwaukee and University of Wisconsin-Milwaukee. The chart on the next page shows improvement from five years ago in attendance, graduation rate, drop out rates, and the percent proficient on the Wisconsin Knowledge and Concepts Examination in grades 4, 8, and 10. And an increasing number of high school students enrolled in AP courses. However, overall student achievement in MPS remains well below statewide averages and achievement gaps on statewide and district assessments persist across all grade levels and subgroups of students. Based on the performance of students taking the WKCE-CRT in 2006-07, MPS has 26 Schools Identified for Improvement (SIFI) under the provisions of the No Child Left Behind Act.
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Data Groups</th>
<th>2002-03</th>
<th>2006-07</th>
<th>+/-</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enrollment</strong></td>
<td>Enrollments reflect the total number of students served by MPS, including alternative and partnership schools, non-instrumentality charter schools, contracted early childhood programs, Headstart, and K4.</td>
<td>Data Groups</td>
<td>97,293</td>
<td>90,925</td>
<td>-6,368</td>
</tr>
<tr>
<td><strong>Student Attendance</strong></td>
<td>Attendance is calculated by grade span and reflects the number of days attended divided by the total number of days scheduled.</td>
<td>PK-KG</td>
<td>88.1%</td>
<td>90.6%</td>
<td>+ 2.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 – 5</td>
<td>93.4%</td>
<td>92.8%</td>
<td>- 0.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 – 8</td>
<td>86.0%</td>
<td>89.1%</td>
<td>+ 3.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 – 12</td>
<td>77.5%</td>
<td>79.4%</td>
<td>+ 1.9%</td>
</tr>
<tr>
<td><strong>High School Dropouts</strong></td>
<td>The dropout rate accounts for all grade 9-12 dropouts, divided by the grade 9 – 12 Third Friday enrollment.</td>
<td>9 – 12</td>
<td>10.2%</td>
<td>8%</td>
<td>- 2.2%</td>
</tr>
<tr>
<td><strong>High School Graduation Rate</strong></td>
<td>The graduation rate is calculated using a quasi-longitudinal method developed by the National Center for Education Statistics.</td>
<td>9 – 12</td>
<td>61%</td>
<td>68%</td>
<td>+ 7%</td>
</tr>
<tr>
<td><strong>Advanced Placement Exams</strong></td>
<td>Many students enrolled in Advanced Placement courses take end of course exams; a passing score allows students to secure college credit.</td>
<td>9 – 12</td>
<td>938</td>
<td>1,526</td>
<td>+ 588</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Achievement Trends</th>
<th>Student Achievement Data</th>
<th>Brief Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wisconsin Knowledge and Concepts Examination - Criterion Referenced Test (WKCE-CRT)</strong></td>
<td>Reading: 62% 62% no change Language Arts: 57% 58% + 1% Math: 46% 52% + 6% Science: 47% 49% + 2% Social Studies: 75% 78% + 3% Reading: 55% 62% + 7%</td>
<td>In 2006-07, the percent of students attaining a score of proficient and advanced for Grade 4 remained the same for Reading and increased in math when compared to the 2002-2003 school year. Slight increases occurred in Science and Social Studies and Language Arts.</td>
</tr>
<tr>
<td></td>
<td>Language Arts: 33% 35% + 2% Math: 34% 40% + 6% Science: 33% 39% + 6% Social Studies: 46% 52% + 6% Reading: 40% 39% - 1% Language Arts: 38% 39% + 1% Math: 28% 29% + 1% Science: 25% 26% + 1% Social Studies: 33% 39% + 6%</td>
<td>In 2006-07, the percent of students attaining a score of proficient and advanced for Grade 8 rose in all subject areas when compared to the 2002-2003 school year.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In 2006-07, the percent of students attaining a score of proficient and advanced for Grade 10 rose in all subject areas when compared to the 2002-2003 school year, except for a slight decrease in Reading.</td>
</tr>
</tbody>
</table>

* The most recently reported data by the state is for the 2005-2006 school year; data is expected to be available in late 2007.

Updated 08/08/2007
**K-8 School Enrollment:**
Over the last several years, a major district initiative has been expansion of K-8 schools to provide alternative learning environments for middle grades students. The number of K-8 schools has increased from 12 in 1998-99 to 59 full K-8 schools in 2006-07. The percentage of middle grades students enrolled in K-8 schools has increased correspondingly, from 9% in 1998-99, to 43% in 2006-07.

**Students Receiving Free/Reduced Lunch:**
Since 1995-96, a growing percentage of children have been eligible for free/reduced price lunch. At the elementary level, 81% of the students during 2006-07 received free/reduced price lunch, an increase from 76% ten years earlier. At the middle level, 83% received free/reduced price lunch, an increase of 13 percentage points. And at the high school level, students eligible increased from 59% to 73% in ten years.

**Student Attendance Rate:**
Data from 2006-07 reveal that the highest student attendance rate is at elementary grade levels (1-5) at 92.8%, followed by students at middle grade levels (grades 6 to 8) at 89.1%. Although the lowest student attendance rate is at the high school level (79.4%), the rate had been steadily improving until 2006-07, when a drop of 0.6 percentage points was observed. Good improvements have been noted in kindergarten and pre-kindergarten attendance as schools emphasize the importance of attendance with families.

**High School Graduation and Dropouts:**
The annual high school dropout rate (grades 9-12) for the district has declined from a high of 13.9% in 1996-97 to 8.0% in 2005-06 (the most recent year data is available; updates for 2006-07 are pending DPI analysis and reporting). The state uses a quasi-longitudinal methodology developed by the National Center for Education Statistics for calculating graduation rates. The lowest graduation rates are for Native Americans and African Americans; the highest are for Asians and whites. Districtwide, the high school graduation rate has steadily risen over the last six years from just 52% in 1999-00 to 68% in 2005-06.

**Wisconsin Knowledge and Concepts Examination-Criterion Referenced Test (grades 4, 8 and 10):**
The state of Wisconsin requires an annual assessment in Reading, English Language Arts, Math, Science and Social Studies at grades 4, 8 and 10. Additionally, students in grades 3, 5, 6, and 7 are also tested in Reading and Math. Since the 2002-03 school year, the percentage of students in grades 4, 8, and 10 with proficient/advanced scores has risen in each subject except high school Reading. In 2006-07, strong improvements were seen in Math in grades 4 and 8. There were also strong improvements in Reading and Science in grade 8.

**Achievement Gap**
MPS analyzes achievement gaps in two ways. First, the district examines the gap between the district and the state. Then, the district examines the gap within the district between student groups. In 2006-07, the achievement gaps between MPS and the state on the WKCE-CRT declined in both Reading and Math in 4 of 7 tested grades. Overall, the achievement gap is wider in Math than it is in Reading. And the gap widens from grade 4 to grade 8 to grade 10. For example, while the gap was 20 percentage points in Reading at grade 4 during 2006-07, it increased to 22 percentage points in grade 8 and 36 percentage points at grade 10. In Math, the gap ranged from 28 percentage points at the elementary level to 42 percentage points at high school.

Data reveals that the gap between Hispanic and African American students and their white peers has increased in both Reading and Math at grade 10. However, gaps at grades 4 and 8 in Reading and Math generally decreased in 2006-07 from the prior year.

A number of graphs and tables on selected district demographic and achievement trends are included in the Appendix, Selected District Demographic and Achievement Trends.
**History of the Evolution of the Library Media Program**

The Long-range Plan for Library Media Programs, 1991-1995 and the district’s Compliance Plan for addressing certified staffing in elementary schools, served as guide for the development of library programs through the 1990’s. The handbook for library media center operation was updated with important documents and information for the changing face and decentralized model of school librarianship. During this time, school library media centers were being automated and adding access to resources in an electronic format. Students in an increasing number of elementary schools were reaping the benefits of collaboration and integrated projects that included elements of information literacy.

Throughout this period, the district experienced a steady increase in collaborations among library media staff through the implementation of a K-12 Library Media Council which was established to address district-wide library issues and concerns. In addition, it became necessary to develop broader based communication tools to provide school library personnel with up to date information and resources to effectively run their libraries. This communication was delivered through monthly newsletters, periodic staff meetings, staff development and the establishment of the Virtual Library.

The “MPS Virtual Library” is available to all staff and students in the district, which was begun with additional Common School Fund dollars which consist of an array of quality resources spanning the K-12 continuum. While the Virtual Library has expanded and changed the district's collection development strategies, expansion of the physical collection in all formats continues to be an important emphasis. During this period of growth there was an attempt to create an environment that would assist library media personnel in building collaborations with each other and provide a vehicle for them to work together to develop policies and procedures that would improve library media programs in the MPS district.

The Common School Fund allocation has been a vital resource for the district ensuring that all schools have adequate resources to establish viable school library media collections. The need today is for collections to be better balanced, emphasizing the independent reading level of the students being served and to enhance curricular activities. The variety of materials available such as big books, paperbacks, hardcover books, DVDs, CDs, and e-books, means schools must make good decisions not only in terms of the content but also the format. Schools are offered support and training to ensure they have the skills and information needed to effectively purchase library media resources to meet their needs. Technology and the state’s dedication to supplying its citizens with online resources through Badgerlink enhances the district's Virtual Library, equipping students with information and the opportunity to practice and refine their searching skills beginning in the elementary grades.

Milwaukee Public Schools is in the process of implementing an enterprise-wide (central) library automation system as an innovative library automation solution providing easy, 24/7 centralized access to the district’s shared media collection. The enterprise-wide library automation system allows the district to centralize library management for all schools from a single installation, accessed via any supported web browser. This strengthens the connection between the library and the classroom through curriculum-enhancing online services that improve and expand access to quality information for students and teachers.

Ties to other libraries in the metropolitan community and other departments throughout the district have been nurtured and strengthened. Many grants have been joint efforts with the Milwaukee Public Library, if not specifically stated, certainly in the planning and writing. The needs of school library media centers have been given more visibility in the district because district level staff has been active in promoting the support and resources available from school library media centers. Recently, collaborations between district library media staff and counseling services resulted in a decision to acquire WisCareers, an interactive, Wisconsin based online database for students which includes career assessments, information about occupations and colleges to facilitate lifelong career development. These outreach efforts have enhanced the information network and the professional development opportunities of our school library media staff and have brought greater awareness of all the information avenues available to all staff and students.
In an area of continuing growth and change it is essential to provide professional development on an ongoing basis. During the mid 1990s, such offerings were targeted to the areas of growth – information technology, library automation and implementation. The paradigm shift in terms of support has found the district library media staff facilitating the leadership development of principals/school leaders, participating in educational plan reviews, and contributing to major academic activities such as the Characteristics of a High Performing Urban Classroom. The MPS Virtual Library continues to be a library-sponsored professional development opportunity geared to attract teachers as well as library media center staff. The monthly trainings for staff new to the library media center, which were a component of the district’s compliance plan in 1993 have remained in place, providing new library staff a grounding in the policies and procedures they will need to lead the library media center program. The district library media specialists also support the curriculum resource center, which offers resources and curriculum development assistance to all teachers in the district.

**History of the Evolution of the Instructional Technology Program**

The MPS Division of Technology, created in 1995, oversees the business applications and maintains the infrastructure needed to allow schools to focus on using technology tools to improve teaching and learning and impact student achievement. The first nine MPS sites were brought up on a frame relay network in 1996 with Internet connectivity and training in Internet use, safety and curriculum connections. Since then, all MPS sites have been wired with high speed access and full connectivity for voice, video, and data in every classroom.

Since 2000, MPS has fully implemented an information management system integrating student, staff and administrative data across the district which creates substantial efficiencies in the financial and administrative arenas. More important, these industry-proven technology management strategies have enabled MPS to create a student-centric data system integrating student attendance, daily grades, report cards, test results, and demographic data. This information gives students, parents, teachers and staff the ability to make informed, data-driven decisions to improve the quality of learning for each child. Now, the district is working to utilize the information gathered to enable teachers’ creation of student-centered learning environments that address individual learner’s needs and capabilities.

At the same time that the MPS infrastructure was established, a parallel plan for technology use in the classroom was created. One arm of this MPS Division of Technology is Learning Technologies which ensures that classroom level needs are addressed and that there is a connection to educators. Over the past 11 years, through many initiatives funded by both local and federal programs such as Technology Literacy Challenge Fund (TLCF) and Enhancing Education Through Technology (EETT), schools have increased their ability to foster 21st century skills in their students. Professional development and curriculum alignment play an important role in moving schools from the awareness stage to adoption and exploration and finally to transformation of teaching and learning practices with technology as defined by the enGauge scale.

It is clear that MPS has worked diligently to ensure every dollar Milwaukee taxpayers invest in district technology programs provides maximum impact. The district’s ability to leverage federal, state and private grant monies and hardware donations for programs is one tangible reflection of that commitment. These direct outside investments have enabled the district to achieve dramatic, rapid progress. Just as significant are the benefits received from indirect investments. MPS’ position as a technology leader among large urban districts has garnered significant attention from researchers, foundations and government at the local, state and national levels. MPS has been a featured district in significant national studies - by the University of Wisconsin - Milwaukee, Marquette University, Cardinal Stritch University, the Education Writer’s Association, the Center for Children & Technology, the Benton Foundation, the Joyce Foundation, Harvard University, Northwestern University, Princeton University, and the Alliance for Public Technology -- evaluating the effectiveness of technology efforts in school districts. In addition, Sam White at UW-Milwaukee is evaluating Project Lead The Way and the district is part of a statewide evaluation by UW-Madison’s Center on Education and Work. The results of these studies provide feedback on the district’s efforts and enable MPS to improve the education offered to Milwaukee’s students by using technology in instruction and learning.
Classroom technology is of little use if teachers are not prepared to integrate it effectively in their work. MPS has demonstrated a clear understanding of this fact as evidenced by the aggressive efforts to provide teachers with access to technology training, peer support and the other tools necessary to ensure that technology use translates to success in the classroom. In 1998, online professional development courses were made available through the TLCF program. In the spring of 2003, EETT funding extended online coursework to all Milwaukee teachers. Since then over 2100 public and nonpublic teachers and administrators have successfully completed graduate level online courses focused on the integration of technology across the content areas.

The Virtual Induction Project (VIP) was created to continue focusing on initial educators and teachers in their first three years of practice. Through online synchronous and asynchronous chats, these new educators are supported with timely information and a supportive group to turn to as they struggle through their first years as district teachers. In the area of new teacher induction and retention, it is anticipated MPS will have breakthrough results. Programs such as the MPS Portal, MediaSite Live, the Curriculum Design Assistant (CDA--a district lesson plan repository), and The Learning Community (TLC--a collaborative environment hosted in Moodle) provide technological tools for ongoing training and the opportunity to network, model, and collaborate with other educators. Many teachers, who have previously participated in VIP and are past their third year of teaching, still desire to participate in an online community. These more experienced educators can join 21st Century Learning Communities as part of a program called Professionals Revitalizing Online (PRO), where they can continue to grow professionally and find support.

Since the summer of 2006, middle and high school students have been trained in computer hardware maintenance and repair as well as software installation and trouble shooting. The program has trained over 400 youth who were allowed to take one of their restored computers home to provide families in the MPS community, who would not otherwise have connectivity, with a free desktop. Local area companies donated hardware and Dell supports the program with technical expertise and support. This partnership allows the district to not only embed 21st century skills for students in the academic classroom, but to bridge the digital divide for our students at home as well. Another program, called digital inclusion, will shift ownership of older viable district computers to MPS families to ensure that every district family has at least one Internet accessible computer for parent and student use. MPS is serious about bridging the digital divide at both home and school.

Through high-speed Internet access and video conferencing capability, teachers now have access to learn from and interact with experts from across the globe. In addition, online resources and new technology tools are unleashing the creative spirit of educators, both new and experienced, to help more children become successful learners. Since 2003, MPS has used a course management system to offer online graduate level courses for city of Milwaukee educators. As more and more uses for this collaborative environment were created, the district recognized a need to look for a more cost effective program to deliver the use of this online tool for both students and staff. In 2006, the district switched to Moodle to deliver both online courses and an online collaboration environment that will be available to all MPS stakeholders without any licensing costs.

The Moodle server is configured to host two sites, The Learning Community (TLC) which is used for staff who take online credits or participate in a collaborative room created either for their school staff or around a specific area of curriculum in which they are working with other district professionals. The second site is the Student Learning Community (SLC), which will be used by teachers to create online sites to enhance and extend the instruction that is taking place in their classrooms. Another use of the student site is in partnership with other educational programs such as the online health and science offerings of the Children’s Health Education Center. Students will also be able to benefit from virtual contact with community specialists that align with their areas of study. This program, called the Connecting Curriculum, includes Connecting Courtrooms and Classrooms program that connects students in the social studies classrooms with the Milwaukee County judges. Programs that connect experts in their fields to MPS students, like Connecting Courtrooms and Classrooms, are an excellent example of technology supporting the learning process in subjects like social studies and science. Expansion of these programs is planned through our learning management system hosted in Moodle.
Professional development in technology has changed focus from application based training to curriculum focus. Rather than a class on “Microsoft Word for Beginners,” Projects like Six Traits and Technology (STAT) and Six Traits and Technology for Content Area Teachers (STAT CAT) allows for collaboration with curriculum specialists and changes the focus to student achievement needs and content areas with technology infused. Work has begun to include technology to foster assessment methods that are shared by students and teachers in e-portfolio scenarios.

In the past, a classroom teacher was chosen in most MPS schools to serve as a technology coordinator (TC). Their main role was to assure that all computers and other peripherals were working. Over the years, the MPS network became more complex and the need for district standards supported by the Division of Technology became mandatory. The TC in most buildings had never been formally trained in technology and networks, and the education degree that the person had was being wasted because many of them were having very little student or classroom contact. As MPS moves forward, the role of the TC will be transformed to the role of an Instructional Technology Leader (ITL) who is identified as a member of the Learning Team and whose focus will be on using technology effectively to engage students through student-centered lessons.

Maintenance of computer hardware and software will be handled centrally by trained district technology specialists, and the ITL in each building will model and support teachers in using technology effectively. They will create and implement technology-rich lessons aligned with academic standards. Professional development for ITL’s will be focused on instructional practices and will be provided at the district level. Research has shown that a well skilled educator that is proficient in technology use will provide students the most dynamic and technologically engaging environment. MPS has expanded its professional development efforts to reach more teachers in more content areas affecting student proficiency and engagement through teachers who are more confident in their own proficiency. Most importantly, the ITL in each school will support educator proficiency for all MPS teachers as they effectively integrate technology into their curriculums.

In the past, MPS has not had an organized way of keeping accurate records of district and school level professional development opportunities. There was also very sporadic communication of sessions available to the district as a whole, leaving some educators uninformed of opportunities to grow in their profession. MPS has begun to implement a professional development registration and recordkeeping program to keep track of the wealth of opportunities offered in this district. The web-based electronic management system to facilitate and track professional development for district employees will generate data from the system that will support data-based decision making, accountability and improved use of resources. Staff development will be enhanced and aligned to district goals and state and federal standards. The online application, ENROLL, will provide the web-based tools and information technology necessary for school and district staff and leaders to create, select, access, and document professional development to support a continuum of growth. The result will be a high-quality, district wide, coordinated professional development system that is accessible to all district employees.

To ensure that teachers in Milwaukee Public Schools receive ongoing, sustainable professional development in the area of instructional technologies and to help staff meet educator proficiencies, we are in the process of developing professional development modules. These modules are on a plethora of topics, ranging from a teacher needing some basic spreadsheet skills in order to effectively use Microsoft Excel to display data in the math classroom to using e-portfolios with their students. The majority of these modules are three-week sessions completely online with a final project or action plan that they can immediately implement in their classroom. To foster the drive for our teachers to be self-directed, lifelong learners and effective collaborators with their colleagues, teachers who have successfully completed the modules will have the opportunity to meet with other educators for a share session once a month. In conjunction with this effort, MPS is working to identify an effective tool or method of measuring educator technology proficiency in order to drive the district’s professional development efforts in the future.

In the summer of 2007, a group of educators met to develop Internet Profiles for sixth grade. These profiles are a collection of Internet sites that are content specific and have been aligned to Wisconsin State Standards in grade eight and Milwaukee Public Schools Learning Targets in grades six. These sites are educator
approved and will be used to enhance the current curriculum and will be disseminated to all teachers and students. They will also be posted on the MPS Portal so parents and students can access this information anytime, anywhere! This pilot effort with sixth grade will serve as a model for future work identifying Internet Profiles for other grades.

Student learning is our number one priority. The district’s strategic plan for 2007-2012, unanimously approved by the Milwaukee Board of School Directors, consists of strategic areas and goals, measurable objectives and key outcome measures, and implementation. The very first goal is that students meet and exceed Wisconsin academic standards and graduate prepared for higher education, careers, and citizenships. In order for MPS students to be prepared for the 21st century, students need 21st century skills. Milwaukee Public Schools is proud to present E-learning Kids, a project that will eventually give every sixth grade student in the district a laptop for use at home and school. The goals are to actively engage students through the use of instructional technologies, provide universal access to students and their families at home, and build stronger connections between the teacher and parent, as well as the school and community.

**Planning Process and Information and Technology Team**

The district’s Information and Technology Strategic Plan is dynamic; thus, it is continually reviewed and updated based on formative and summative evaluation data to meet current needs and priorities. Planning, implementation and monitoring of the plan is an ongoing process incorporated into existing structures within the district. This is described in the Section G - Monitoring, Evaluating, and Revising the Plan. One of the tools used in the planning and monitoring processes is an implementation scale for each of the plan’s strategies. A summary of the implementation scales is included in Section C - Needs Assessment. Progress made in implementing the strategies is continually tracked, monitored, and communicated to district leadership staff. Modifications to the plan are made to adjust strategies and timelines as needed.

The district’s current Technology Strategic Plan expires June 30, 2008. However, in order to be eligible to apply for Federal Communications Commission E-Rate funds in late 2007, the district is submitting in October 2007 a revised three-year Information and Technology Strategic Plan for Milwaukee covering the period July 1, 2008 through June 30, 2011.

From October 2006 through June 2007, the district engaged in a collaborative process to develop a five-year district strategic plan with the Milwaukee Teachers’ Education Association, with support from the Greater Milwaukee Committee, and with a number of other community organizations including the African American Education Council. MPS teachers, principals, central services staff, along with community representatives, served on teams that led the development of the district’s strategic plan. Planning and discussions regarding the 2008-2011 Information and Technology Strategic Plan were part of the district’s strategic planning process.

From January through August 2007, discussions were held with district senior management staff and the Office of Finance and Operations, Division of Technology, and Learning Technologies relative to the status of the current plan’s progress and overall direction for modifications for 2008-2011 to support the district’s strategies to improve academic achievement, close achievement gaps, support educator professional development, provide equitable access to resources, as well as improve efficiencies and support teaching and learning through management and information systems.

From April through June 2007, a planning team worked on the development of the ESEA Consolidated Improvement Plan for Milwaukee. Discussions about the Information and Technology Strategic Plan were conducted with the ESEA Consolidated Plan team, which was composed of the coordinators of the district’s categorically-funded programs and administrative staff from divisions directly responsible for implementing the district’s consolidated plan, including Instructional Leadership and Support, Teaching and Learning, Special Education Services, Human Resources, Student Services, Parent Information Center, Grant Development, Diversified Community Schools, Learning Technologies, Research and Assessment, and Finance and Business Operations. In addition, coordinators responsible for various programs participated on the ESEA planning team, including summer school/ Supplemental Educational Services, Head Start, P-5
In June 2007, the core planning team for the development of the 2008-2011 Information and Technology Strategic Plan was identified. In addition, input on the draft plan was received from community representatives, including the city, county, higher education, public library, parent, business and community-based organizations. The plan was submitted to the Milwaukee Board of School Directors for approval in September 2007. The table below provides a summary timeline of the planning process.

**Planning Timeline:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 2006 – June 2007</td>
<td>Ongoing discussions and input as a part of the MPS five-year strategic planning process.</td>
</tr>
<tr>
<td>January- August 2007</td>
<td>Ongoing discussions with district senior management staff and the Office of Finance and Operations, Division of Technology, and Learning Technologies relative to status of current plan’s progress and direction for the future.</td>
</tr>
<tr>
<td>April- June 2007</td>
<td>Review and discussion as a part of the ESEA Consolidated Improvement Plan for Milwaukee.</td>
</tr>
<tr>
<td>June 2007</td>
<td>Core planning team identified for the 2008-2011 Information and Technology Strategic Plan.</td>
</tr>
<tr>
<td>July- Sept. 2007</td>
<td>Core planning team meetings held. In addition to team meetings, smaller working groups met to complete assigned tasks.</td>
</tr>
<tr>
<td>July 26, 2007</td>
<td>Planning team meeting – The guidelines and requirements for the plan were reviewed and the planning process was outlined. Tasks were assigned to individuals and smaller working groups.</td>
</tr>
<tr>
<td>August 7, 2007</td>
<td>Planning team meeting – Conducted needs assessment activities, including review of progress on current plan and evaluation data for objectives. Discussion held on modifications recommended based on needs, progress achieved, and research-proven best practices.</td>
</tr>
<tr>
<td>August 14, 2007</td>
<td>Planning team meeting – Continued needs assessment activities and discussion on modifications to goals, objectives, and strategies. Additional assignments made to planning team members on the required narrative components.</td>
</tr>
<tr>
<td>August 22, 2007</td>
<td>Planning team meeting – Reviewed and discussed draft revised implementation action plan, including needs statements, goals, objectives, strategies, and management/improvement plan. Discussed updating strategies for dissemination. Planned for the community input session.</td>
</tr>
<tr>
<td>Week of Aug. 27, 2007</td>
<td>Draft plan discussed with district’s senior management.</td>
</tr>
<tr>
<td>August 27, 2007</td>
<td>Community input meeting – Progress report presented on the 2005-2008 plan, discussion on how the plan is aligned to the district’s five-year strategic plan; draft goals, objectives, and strategies for 2008-2011 were presented and input was received.</td>
</tr>
<tr>
<td>Aug. 28- Sept. 11, 2007</td>
<td>Planning team meetings and work – Continue to finalize the components of the plan.</td>
</tr>
<tr>
<td>Sept. 18, 2007</td>
<td>Meeting of the School Board’s Finance and Personnel Committee – Action on the recommended Plan</td>
</tr>
<tr>
<td>Sept. 27, 2007</td>
<td>Meeting of the Milwaukee Board of School Directors – Plan approved by the Board.</td>
</tr>
</tbody>
</table>
Planning Team Members

James Davis, Chair, Director of Division of Technology
Phyllis Anderson, Title I Coordinator, Instructional Leadership and Support
Veronica Ariens, Supervisor, Technology Support Center
Lauren Baker, Coordinator, Career and Technology Education
Molly Barrett, Acting Director, Recreation and Community Service
Richard Brigham, PhD, Division of Special Services
Lisa Chatman, Library Media Specialist, Teaching and Learning
Andy Engel, Specialist, Technology Support Center
Christina Flood, Teaching and Learning
Victoria Frazier, Supervisor, Professional Development, Teaching and Learning
Shannon Gordon, Learning Technologies
Kathleen Kirchhoff, Categorical Grants Coordinator
Anne Knackert, Teacher, Learning Technologies
Deb Lindsey, Director of Research and Assessment
Neva Moga, Teacher, Learning Technologies
Kathleen Moore, Division of Special Services
Nicol Peters-Freeman, Teacher, Learning Technologies
Antonio Rodriguez, Curriculum Specialist-Science, Teaching and Learning
Diane Rozanski, Teacher, Learning Technologies
Robert Schleck, Principal, Burdick School
Jerome Schulz, Manager of Application Development, Division of Technology
Wendell Smith, Principal, Longfellow School
Roberto Surita, Manager of Technical Services, Division of Technology
Brian Wiegand, Specialist, Technology Support Center
Kathy Williams, Director, Teaching and Learning
Daniel Yao, Division of Technology Consultant

Expanded School/Community Team (Includes core planning team members listed above)

Ron Cleboski, Time Warner Cable
William Gilgenbach, Stratagem, Inc.
Randy Gshwind, Information Systems, City of Milwaukee
Ken Harris, I-Tech, Inc.
Thomas Liebenthal, Office of the Milwaukee County Sheriff
Bruce Maas, Office of Information Technology, University of Wisconsin-Milwaukee
Rick Moore, Director of Facilities and Maintenance, Milwaukee Public Schools
Robert Munger, Munger Technical Services
Chris M. Protz, Boys & Girls Club of Greater Milwaukee
Sister Joel Read, Education Consultant
Betty Smith, Milwaukee Catalyst, parent/community representative
Michael J. Soika, Community Development Center, YMCA of Metropolitan Milwaukee
Jim Walsh, Information Technology, Milwaukee Area Technical College

The team followed the broad steps of the planning process recommended in the guidelines by the Department of Public Instruction. The following is a brief overview of the planning activities and resources used.

Planning Activities and Resources Used:

Needs Assessment

- Progress toward the previous technology and library plans' goals was reviewed. Implementation scales were updated for each initiative of the previous technology plan's goals.
- Update provided on ESEA requirements and the content of the ESEA Consolidated Plan shared.
- Student achievement data, including achievement gap data and demographics, was reviewed.
- Infrastructure/equipment data analyzed and reviewed.
- Key critical needs identified based on data review.
Goals, Objectives, and Implementation Action Plan - Activities (for each Goal/Objective)

- Draft goals shared with community team at its August 27 meeting.
- Measurable objectives and activities for each were drafted and discussed at core planning team meetings. Objectives and activities were continuously fine-tuned based on analysis of data from needs assessment information, along with input from participants at the community meeting. Plan was modified based on comments and suggestions received from the participants.
- Resources used included: ESEA No Child Left Behind requirements, Wisconsin Teacher Standards, National Education Technology Plan, International Standards for Technology Education (ISTE), National Education Technology Standards for Students, Teachers, and Administrators (NETS), Guidelines from Universally Designed Learning Environments, Wisconsin Information and Technology Literacy Standards, and Information and Technology Literacy series of guidebooks from DPI. Conducted review and discussion of educational research identified to support the Plan's objectives and activities.

Budget / Policies

- Review and analysis of existing policies conducted to ensure policy requirements are met.
- Draft plan and budget discussed with senior management.

Monitoring, Evaluating, and Disseminating the Plan

- Monitoring and evaluation methods were drafted and discussed as a part of the development of the Implementation Action Plan. A report format facilitates the ongoing monitoring and evaluation of the Plan as well as a vehicle to report progress on an annual basis.
- Draft plans for communicating the Plan were discussed at a team meeting in August.

Collaborative Initiatives

Public Libraries:

The partnership between the school libraries and the Milwaukee Public Library has continued to be strengthened throughout the 1990s and into the new century. From formal relationships fostered by several TEACH grants to informal efforts such as the collaborative endeavor to provide parents and caregivers with requested reading lists appropriate to each elementary grade level, the emphasis has been on the complementary nature of library services in our community. This partnership has led to successful information exchanges that help each institution do a better job in meeting the information, entertainment, and literacy needs of the children, young adults, and families of Milwaukee, as well as educators.

The Milwaukee Public Library has been very proactive in promoting their summer reading program and visiting schools to talk it up before the school year ends. The library media staff in schools has been an important link in getting the word out and in rewarding those who return to school in fall having participated. The library message is one of service and support intertwined between school and community regardless of calendar.

Working from separate missions but having the same goal has led to a number of successful partnership efforts. A couple years ago, the Milwaukee Public Library received a Library Services and Technology Act (LSTA) grant to better serve people in the community that have various special needs that normally would not be evident, but nevertheless serve to reduce their ability to enjoy reading. The MPS library media and special education staff were able to offer many ideas and information to help them craft an effective grant proposal. When MPS was preparing its successful proposal for the “Improving Literacy Through School Libraries” grant, the Milwaukee Public Library provided much assistance with the extended day and extended year component.

Mutual needs for professional development resulted in several TEACH grant events that brought together staff from both institutions. This, as well as instances where school library staff meetings were hosted at the central Milwaukee Public Library, raised awareness about resources and services available through the larger
library community. This first-hand knowledge was then carried back to the school sites and informed teachers and other staff as well as promoted use of the library among the students. These events have also provided the opportunity for informal conversation and exchange that has done much to enhance the school and public library service to the young people of the community.

Universities, Business, and Other Community Partners:

MPS collaborations are categorized into two areas: 1) Collaborations involving districtwide partnerships which have the potential for systemic impact and change; and 2) local school collaborative efforts focused on specific projects or ongoing programs.

Districtwide Collaborations

Milwaukee Public Schools is one of the executive partners of the Milwaukee Partnership Academy (MPA), which is an urban P-16 partnership collaboration between the University of Wisconsin-Milwaukee, MPS, the Milwaukee Board of School Directors, the Milwaukee Teachers’ Education Association, the Milwaukee Area Technical College, the Metropolitan Milwaukee Association of Commerce, the Private Industry Council, the Mayor of the City of Milwaukee, Helen Bader Foundation, and the Greater Milwaukee Committee. This is a broad-based collaboration between major community stakeholders including public school, teachers' union, university, business, governmental, and community partners with a common interest and commitment to share responsibility for quality teaching and learning in Milwaukee. The broad initiative of the Milwaukee Partnership Academy is to assure that every child in MPS is performing at or above grade level in reading, writing, and mathematics through shared responsibility for student success. The primary goals are to: 1) Increase student achievement; 2) Improve the quality of teaching and learning; and 3) Address systemic issues across educational institutions.

The University of Wisconsin-Milwaukee, Milwaukee Area Technical College, Alverno College, and Cardinal Stritch University are active partners in the Milwaukee Partnership Academy along with other area colleges and universities. The MPA was initiated in 1999 as a result of the partners jointly applying for and being awarded a Title II grant from the U.S. Department of Education. The overarching goal of that grant was to develop a comprehensive teacher education prototype for preparing future teachers to succeed in urban, high-need schools through a strong and unique local partnership. What started out as a partnership effort for one grant has grown into a comprehensive collaboration of key stakeholders working on systemic educational reform. The work of the MPA is aligned to the district's strategic plan and partners are engaged in ongoing dialogue to address urban educational challenges across institutions.

One example of the MPA's involvement is through the Metropolitan Milwaukee Area Deans of Education (MMADE), which consists of the UWM and the six local private higher education institutions that also prepare teachers, administrators and other personnel for the public schools. On behalf of the MPA, the UWM Dean of Education convenes the MMAKE members during the academic year to discuss and develop ways in which all institutions can support and assist MPS. Building the capacity of MPS in the development of new teachers, administrators and other school personnel is an important factor in the partnership with MPS. While UWM prepares more teachers for MPS than any other higher education institution in the state of Wisconsin, quality teachers for MPS is the business of all programs that provide teacher candidates hired by MPS. All members of MMAKE contribute directly to the MPA through their work on the MPA Implementation Team and its various work groups. Through MMAKE, local institutions of higher education have an opportunity to dialogue with technology and teaching and learning staff from MPS to discuss the technology expectations and assessments for student teachers so that efforts can be better aligned.

MPS is one of three core partners of the Milwaukee Partnership Academy implementing the Milwaukee Mathematics Partnership through a five-year, $20 million grant from the National Science Foundation. Math educators and mathematicians from MPS, the University of Wisconsin-Milwaukee, and the Milwaukee Area Technical College are working together to implement a comprehensive mathematics framework at each school through inclusion of a mathematics teacher leader in each school's leadership. The project targets
student mathematics achievement in MPS and student transition to higher education. An Institutions of Higher Education Mathematics Network consisting of two- and four-year colleges and universities focuses faculty on the mathematical preparation of teachers for PK-12 student achievement and improved transition of students to colleges through reduction of the number of students placed in remedial math courses. Key courses in the preparation of teachers, both in mathematics and education, are being redesigned or created to strengthen the mathematics content knowledge of teachers.

MPS is partnering with the MPA and the Metropolitan Milwaukee Association of Black School Educators on strategies to close achievement gaps in MPS. The partners submitted and were awarded a grant from the National Education Association to support specific strategies at targeted schools, with the potential for scaling up the strategies districtwide. The partners are currently engaged in implementation of the project.

MPS is collaborating with the Milwaukee Partnership Academy, Alverno and the University of Wisconsin-Milwaukee in developing a research based middle and high school literacy program and intervention model. This comprehensive literacy framework will include the elements of technology and diverse text. Library media resources will help provide students with diverse texts that present a wide range of topics at a variety of reading levels. A technology component will include technology as a tool for and a topic of literacy instruction. Technology may be used as an instructional tool to help teachers provide needed supports for struggling students, including instructional reinforcement and opportunities for guided practice. Technology may also be used as a means for students to develop 21st century skills.

Early in 2006, MPS asked the Council of Great City Schools (CGCS) to convene a Strategic Support Team to review the district's efforts to improve student achievement, to benchmark the district's practices against those employed by faster-improving urban districts throughout the nation, and to make recommendations for accelerating gains in student achievement.

The CGCS Strategic Support Team finalized its recommendations to the district in a report issued in June, 2006. Findings and recommendations were categorized into ten major areas, including the following:

1. Articulate a clear sense of urgency regarding the need for change; develop a process to ensure progress is made in meeting explicit goals.
2. Engage an outside facilitator to assist the district in updating its strategic plan.
3. Include achievement measures in the personnel evaluations of various staff members.
4. Revise Learning Targets to ensure they are in complete alignment with state standards and assessment frameworks; use them as a basis for pacing guides and professional development.
5. Focus professional development on areas with greatest leverage, e.g. implementing aligned Learning Targets and using data to inform instruction.
6. Ensure teachers have support for intended curriculum and reforms and for intervention support for students who are not achieving.
7. Develop a data reporting system to provide schools with data they need to inform decision-making; establish a 3 - 5 year plan for evaluating major programs and initiatives.
8. Mandate programs, professional development, and interventions for Schools Identified for Improvement and establish intervention strategies for students who are falling behind.
9. Explore options for creating common planning time for elementary teachers.
10. Establish strong evaluation of small high schools and small learning communities to determine their impact on student achievement.

Since the Council's review, the district has responded in a number of significant ways. A community-based strategic planning effort was launched, resulting in the adoption of a new Strategic Plan for the district. An intervention plan has been established for low performing schools. The district's data warehouse has been re-designed, and it has been deployed with a new dashboard and query/reporting tool. Efforts are underway to develop a district-wide professional development plan, and course-taking will be tracked electronically. Quarterly benchmark assessments in reading and math have been implemented, and Learning Targets have been revised to ensure alignment with the state's assessment framework.
The Gilder Lehrman Institute of American History is a major partner in the district’s Teaching American History Grant and sponsors five schools with funds to promote the study and love of American history. The Institute maintains a website to serve as a portal for American history on the Web; to offer high-quality educational material for teachers, students, historians, and the public; and to provide up-to-date information about the Institute’s programs and activities. Through the use of Teaching American History Funds and the support and resources of Gilder Lehrman, MPS has developed four graduate credit online courses specific to US History for MPS teachers.

The National Writing Project, supported by Dr. James Vopat and Carroll College, offers graduate credit to teachers who use technology to support best practices in writing. Project participants meet for several weeks during the summer and then continue their conversations via online resources during the school year. Teachers share tools to support classroom instruction and work to collaboratively provide feedback to enhance student performance in writing.

Online Professional Development (OPD) Courses – Cardinal Stritch University evaluates the OPD courses to ensure that the courses meet Cardinal Stritch standards. Upon successful completion by the participant, Cardinal Stritch awards credit.

The MPS STEM Partnership Team (STEM stands for Science, Technology, Engineering, and Mathematics) is a new collaborative started in November 2004 to strengthen and motivate MPS students (K-12) in science, technology, engineering, and mathematics and related careers. Approximately 40 business corporations, community organizations, foundations, colleges, universities, and others are part of the MPS STEM Partnership Team. Examples include: Johnson Controls, CH2M HILL, United Water, Milwaukee Metropolitan Sewage District, The Kern Family Foundation, Stratagem, Rockwell Automation, Harley Davidson, Wells Fargo IT Services, Greater Milwaukee Foundation, Milwaukee Area Technical College, Marquette University, UW-Milwaukee, Medical College of Wisconsin, and Milwaukee School of Engineering. The team members work in a variety of roles as mentors, leading tours through their workplaces, providing job shadowing opportunities for teachers, providing internships, advising on curriculum and the like.

Milwaukee Means Business is a partnership convened in September 2005 to assess, review, and update curriculum guidelines for MPS Courses in Business and Marketing Education to better integrate technology methods and competencies. Twenty-two representatives from the local business community and post secondary schools worked on the development of curriculum that would be relevant to a high school student gaining a better understanding of employment practices, skills, and knowledge for the 21st Century workplace. The coursework includes the opportunity for students to obtain computer based MOS Certification (Microsoft Office Specialist), A+ Certification and State of Wisconsin Certifications in Cooperative Education and Youth Apprenticeship.

The Southeastern Wisconsin Assessment Collaborative (SEWAC) is funded through a grant from the Joyce Foundation. (SEWAC) is a consortium of public school and parochial districts in the metropolitan Milwaukee area. The districts, which include MPS, in conjunction with Alverno College, collaborate to create a multi-district collaborative focused on performance assessment as a support to student learning. Additionally, the group creates a working infrastructure for coordination of efforts within and across districts, with a special emphasis on the design and validation of performance assessments, the development of scoring guides/rubrics and the professional development of teachers. Finally, the consortium also designs an educational campaign to develop wide and deep community understanding of the purposes of education and appropriate uses of varied forms of assessment to support learning and document student learning. Currently, about 25 MPS schools are participating. For more information about SEWAC, see http://www.sewac.org/aboutsewac.htm

MPS actively participates in the Wisconsin Assistive Technology Initiative (W.A.T.I.). This project is designed to increase the capacity of school districts to provide assistive technology services by making training and technical assistance available to teachers, therapists, administrators and parents throughout
Wisconsin. The primary goal is to improve the outcomes and results for children and youth with disabilities through the use of assistive technology to access school programs and curriculum.

Beginning in the fall of 2006, the collaboratively developed Characteristics of a High Performing Urban Classroom Learning Walk was a required tool for school leaders and learning teams. The purpose is to improve instructional practice by providing timely feedback on four of the eight Characteristics. Starting in the 2007-2008 school year, school leaders will conduct the learning walks and enter information on personal data assistants (PDAs). Data will be sent via the Internet for analysis, and receive a web-based data report. In addition to the Characteristics learning walk, three Instructional Practices Inventories are conducted annually by external teams in all low performing schools.

Family Literacy and Tutoring

MPS and the Milwaukee Partnership Academy are implementing strategies to promote Family Literacy and Tutoring in Milwaukee. Partners working on this initiative include the YMCA of Metropolitan Milwaukee, Even Start/Family Literacy Coalition, UWM Service Learning, Milwaukee Catalyst (parent/community advocacy group), UNCOM/Journey House, Milwaukee Area Technical College, UWM Partnerships for Education, MPS Homework First, and the Helen Bader Foundation. The partners are focusing their work on the following broad goals:

- Increase regular student use of tutoring sites in the city by offering a web-based database of service providers.
- Increase student access to tutoring and literacy opportunities by recruiting and training volunteer tutors/mentors to support student achievement in MPS;
- Increase involvement in family literacy activities.

A user-friendly resource directory and searchable database of community tutoring and literacy providers has been developed as part of an independent graduate study seminar in knowledge management at UWM through the College of Letters and Science. The resource directory will assist families in seeking to locate tutoring resources and linking volunteers to volunteer opportunities. These resources are components of a continuous effort to ensure students of Milwaukee Public Schools can perform at or above grade level in reading, writing and mathematics. Families are able to use this technology tool to locate tutoring and family resources by visiting [www.milwaukeepartnershipacademy.org](http://www.milwaukeepartnershipacademy.org) and clicking “Tutoring.” The partners are also developing a model volunteer recruitment and training program, along with standards of effective tutoring/academic mentoring that will be promoted for use by all community providers. The searchable database will be used to help facilitate volunteer tutor placement. This is a major community-wide project that has great potential for providing coordinated services to the children and families of Milwaukee.

MPS has a unique collaboration with “community-based organizations to provide after school and summer programs in partnerships with our schools. These programs, known as Community Learning Centers, (CLC’s) continue to offer a vast array of academic activities to the children of Milwaukee. Fifty-two CLC’s (six high schools, eight middle schools and 38 Elementary/K-8 Schools) throughout the city design and implement academic programs that are aligned to state standards and the district's Learning Targets. Each site collaborates with the day school to design a program plan that utilizes data from the school’s Educational Plan. Activities and strategies, that reflect the needs of the students, are implemented in the CLC extended-day programs. Activities include: homework help, tutoring/mentoring, literacy, writing, science and mathematics. High school sites provide opportunities for students to complete graduation requirements by offering Credit recovery classes and GED programs. Students become technologically adept as they learn skills to assist them with Web design, word processing, Power Point and research/data gathering on the Internet.

Milwaukee’s Community Learning Centers continue to raise the educational level of the city’s young people by providing an environment that promotes literacy, enrichment and recreation. Current CLC community partners include the: Boys & Girls Clubs of Greater Milwaukee, YMCA of Metropolitan Milwaukee, Silver
MPS has had an on-going partnership with over 30 churches in the Milwaukee area to provide free homework help during after-school hours. All church sites tutor K5 through 5th graders and some locations assist older students. Teachers are encouraged to refer students who need additional academic assistance to the after-school tutoring program. Church members are recruited to volunteer as tutors. MPS provides curriculum and training to support this initiative.

The MPS Safe Place model is designed to meet the working parents’ need for before- and after-school childcare services, the school’s need for tutoring and homework assistance programs, and child’s need for the social interaction that leads to positive development. Currently eight schools partner with the YMCA of Greater Milwaukee, Milwaukee Christian Center, Community Baptist Church or Silver Spring Neighborhood Center to serve students in kindergarten through grade five.

MPS coordinates numerous family literacy efforts through Title I, Title III, and local funds. Various programs and services include English as a second language/literacy instruction for parents, pre-reading activities for children, parent and child together time, and parent group time. Literacy programs taught in various schools around the city use both MPS and Milwaukee Area Technical College instructors. These programs include pre- and post-testing, specified goals and objectives, and the opportunity for learners to achieve their goals. Research-based curricula covering topics that are important to learners continue to be the most successful. Learning to use computers is important to many families. Some MPS programs bring families into a computer lab so parent and child can learn together. MPS also offers programs to introduce family members to the public library and helps them get library cards.

Project Focused Collaborations

The following are a few examples of ongoing collaborations focused at local schools on specific or ongoing projects:

- MPS maintains a strong connection with practitioners through special projects and existing structures. Through the Enhancing Education through Technology competitive grant, groups of public and private school teachers meet to plan and implement technology projects within their schools. The team leaders from each project meet monthly with district support staff to share solutions and coordinate efforts.

- MPS schools are surrounded by a large urban area with professionals in many fields who are valuable resources for real-world expertise about content that the students are learning. MPS has been partnering with judges from the Milwaukee County Court System, in a program called Connecting Courtrooms and Classrooms, through face-to-face meetings, email, video conferencing, and on-line discussion. Its purpose is to help middle school students understand the role that the court system plays in the lives of the citizens of Milwaukee, expose them to the variety of career possibilities and affect their personal behavior choices. A similar program is planned that will connect the experts from the Children’s Health Center and Children’s Hospital of Wisconsin with students in middle and high school health and wellness classes. This community engagement model will be replicated with experts in many other fields that support the standards taught in the Milwaukee Public Schools.

- Through a partnership with Dell Computers, Inc., MPS participates in the Dell TechKnow program. In 2006-07, 397 low income children successfully completed the program. The students learned basic computer hardware, software and internet usage. Upon completion, each student received a refurbished Dell Computer to take home along with the Microsoft Office Suite. The MPS District provides free internet service.

- In a partnership with Rockwell Automation, the Society of Manufacturing Engineers, Greater Milwaukee Foundation, the Kern Family Foundation, Harley Davidson Motor Company, CH2M HILL transportation engineers, Badger Meter, Milwaukee Area Technical College, Milwaukee School of Engineering, University of Wisconsin-Milwaukee School of Engineering, Marquette University
School of Engineering, MPS participates in the pre-engineering program Project Lead The Way. MPS has over 2500 children in PLTW classrooms, making this district the largest concentration of PLTW students in the nation. PLTW is a recognized best practice in technology education. MPS’s PLTW program was honored nationally as one of 11 model programs. Locally, the Public Policy Forum awarded the MPS program its Good Government award for a model of public/private partnerships.

- IFair is an innovated approach to the traditional career fair with a focus on IT/Engineering careers. An iFair Planning Team formed in 2006-07 to host career fairs that exposed middle school aged students and high school students to careers in these high technology fields. The first fair was held at Washington High School of IT for 6-8 graders. That fair inspired Harley Davidson to host a second one for high school students. Almost 900 students attended the career fairs.

- Radio For Milwaukee, Marquette University School of Communications and Apple Computer have partnered with the W.E.B. DuBois School of Communication in the development of a media literacy and technology program. Dubois is a newer small high school with a communications focus. The partnership has brought resources and expertise to bear in curriculum development, facilities improvement and technology awareness.

- Milwaukee Means Business is a partnership with 22 business and post secondary organizations dedicated to business and technology education in MPS. This team re-wrote the decades old MPS business curriculum over the past 18 months, infusing technology methods and competencies into coursework. The new model is a Business and Information Technology Education program. This curriculum will touch the nearly 4000 MPS students through Business, Finance and Marketing Education classes.

- The Experimental Aircraft Association in Oshkosh Wisconsin partners with 20 elementary schools in MPS providing a first experience in the technology of aviation, thanks in large part to an individual donation to EAA. MPS students spend two days working with computer simulators, learning basic aviation science and being exposed to the technology careers in that industry. Over 400 elementary students participate in this program each year.

- A curriculum "walk-through" program is being implemented at MPS schools identified for improvement (SIFI) schools. The purpose is to improve instructional practice by providing timely feedback on levels of student engagement. School-based staff conduct the curriculum "walk-throughs," enter information on personal data assistants (PDAs), send the data via the Internet for analysis, and receive a web-based data report.

- MPS is collaborating with the Education Development Center (EDC) to develop and customize courses for online professional development. The EDC is also a key partner in the district’s virtual schools initiative.

- MPS is collaborating with Pier Wisconsin on a Science Under Sail project involving approximately six students and two teachers from each of three to four high schools each year, dependent on grant funding. The students and teachers participate on expeditions aboard Wisconsin’s Flagship, the S/V Denis Sullivan. The project provides hands-on introductory experiences in marine science, mathematics, meteorology, technology, communications, and personal growth and leadership skills for students living and working aboard the schooner. Students onboard produce and deliver live interactive videoconferences from the ship to hundreds of their fellow students at each of the participating schools. Satellite and computer technology permits daily weather and informational updates from the ship’s Virtual Voyage website:  http://voyage.pierwisconsin.org/index.php
C. NEEDS ASSESSMENT / CURRENT STATUS

*Progress on 2005-2008 Information and Technology Strategic Plan Initiatives*

The Milwaukee Board of School Directors approved the first MPS Technology Strategic Plan in December 1996 and the second plan in March 2005.

Initiatives in the 2005-2008 Information and Technology Strategic Plan were focused on the goal of increasing student achievement by giving staff and students expanded options for the way they would learn using current technologies and collaboration tools. The district found success with projects such as:

- Enhancing Education Through Technology which allowed staff members from multiple schools, including non-public to collaborate online and in organized professional development sessions;
- Expansion of the online professional development course offerings for staff;
- Using online networking to support new and experienced teachers;
- Identification of an enterprise library automation system;
- Expansion of instructional and curricular content in Portal;
- Expansion of programs that integrate technology into instruction and assessment;
- Implementation of quarterly benchmark assessments to inform teaching and learning;
- Implementation of communication and collaboration tools;
- Update and standardization of the network;

A progress report of the various strategies and activities in the 2005-2008 Information and Technology Strategic Plan is displayed on the following pages. The progress report is organized indicating the current status of each goal and supporting activities, by placing them on the continuum of analysis, planning and execution. Additional information is provided to reflect the status of the goals and activities as dropped, revised, ongoing, and complete in the 2008 plan.

MPS has and will continue to make major investments in staff development, infrastructure development, and content access and accountability systems. These investments will create expanded learning opportunities for every child in Milwaukee. The progress report demonstrates significant growth and opportunity for continued success.
## GOAL 1  
**Educator Proficiency**

Administrators, teachers, and staff will continually develop information and technology proficiency to enhance their effectiveness, increase student achievement and close the achievement gap.

<table>
<thead>
<tr>
<th>Objective 1.1</th>
<th>Current Status</th>
<th>Analysis</th>
<th>Planning</th>
<th>Execution</th>
<th>Reflection in 2008 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the usage of on-line collaborative tools by 10% each year.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2</td>
</tr>
<tr>
<td>1.1-01 Organize, Analyze and Publish Key Collaborative Tool Usage Data</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2-01</td>
</tr>
<tr>
<td>1.1-02 Provide Training for Use of Collaborative Tools</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2-02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 1.2</th>
<th>Current Status</th>
<th>Analysis</th>
<th>Planning</th>
<th>Execution</th>
<th>Reflection in 2008 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the use of information and technology resources for instruction, assessment, and instructional management by teachers, administrators and other district staff by 10% each year.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2</td>
</tr>
<tr>
<td>1.2-01 Technology Application Usage Data to Align Professional Development Needs with Learning Objectives</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.1-02</td>
</tr>
<tr>
<td>1.2-02 Establish Professional Development Agenda &amp; Build Training Capacity in Assessment, Instruction and Instructional Management Tools</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2-02</td>
</tr>
<tr>
<td>1.2-03 Model Instructional Plans that Emphasizes Universally Designed Learning Environments</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2-03</td>
</tr>
<tr>
<td>1.2-04 Publish Effective Instruction Assessment &amp; Instructional Management Tools</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2-02</td>
</tr>
<tr>
<td>1.2-05 Develop Learning Teams to Align Standards &amp; Expectations of High Performing Library Media Centers &amp; High Performing Classrooms</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2-05</td>
</tr>
<tr>
<td>1.2-06 Evaluate &amp; Deliver the Need for Assistive Technologies During Individual Education Plan (IEP) Process</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2-06</td>
</tr>
<tr>
<td>1.2-07 Evaluate the Effectiveness of Utilizing Electronic Portfolios</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2-07</td>
</tr>
<tr>
<td>1.2-08 Implement a Web-Based Special Services Information Management System</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>1.2-08</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 1.3</th>
<th>Current Status</th>
<th>Analysis</th>
<th>Planning</th>
<th>Execution</th>
<th>Reflection in 2008 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase use of technology tools to send and receive information to and among community stakeholders by 10% each year.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>2.4</td>
</tr>
</tbody>
</table>
# Information & Technology Strategic Plan for Milwaukee

For the period of July 1, 2005 to June 30, 2008

<table>
<thead>
<tr>
<th>Objective 1.3</th>
<th>1.3-01 Evaluate Effective Internal &amp; External Communication to Refine Professional Development Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective 1.4</td>
<td>Build the capacity of the district to use online communities and other technologies to support the induction of 100% of new teachers.</td>
</tr>
<tr>
<td>1.4-01</td>
<td>Departmental Training for Effective Content Management in New Teacher Community (MPS Portal)</td>
</tr>
<tr>
<td>1.4-02</td>
<td>New Teacher MPS Portal Training</td>
</tr>
<tr>
<td>1.4-03</td>
<td>Connect Online Discussions w/ Ongoing Professional Development for New Teachers</td>
</tr>
<tr>
<td>1.4-04</td>
<td>Train Facilitators to Moderate Teacher Community Discussions &amp; Facilitate Online Cadres</td>
</tr>
<tr>
<td>1.4-05</td>
<td>Evaluate Professional Development Provided to Teachers to Correlate the Role of Technology to Teacher Retention</td>
</tr>
<tr>
<td>Objective 1.5</td>
<td>Provide varied methods of both technical and functional technology training and support for all MPS staff.</td>
</tr>
<tr>
<td>1.5-01</td>
<td>School Technology Mentoring &amp; Training Consortia at School Level</td>
</tr>
<tr>
<td>1.5-02</td>
<td>Departmental Training for Effective Content Management in Professional Growth Community (MPS Portal)</td>
</tr>
<tr>
<td>1.5-03</td>
<td>Train Staff to Align Internet-Delivered Resources w/ Instructional Objectives</td>
</tr>
<tr>
<td>1.5-04</td>
<td>Deliver Web-Based Training through the MPS Portal</td>
</tr>
<tr>
<td>1.5-05</td>
<td>Expand Online Undergraduate &amp; Graduate Level Course Offerings</td>
</tr>
<tr>
<td>1.5-06</td>
<td>Expand the Capabilities &amp; Availability of Technology Support Mechanisms for District Applications</td>
</tr>
<tr>
<td>1.5-07</td>
<td>Explore Models of Utilizing Teacher e-Portfolios for Tracking &amp; Sharing Their Development as Professionals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Status</th>
<th>Analysis</th>
<th>Planning</th>
<th>Execution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3</td>
<td>4 5 6</td>
<td>7 8 9</td>
</tr>
<tr>
<td>Reflection in 2008 Plan</td>
<td>Action</td>
<td>Ref #</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>1.3</td>
<td>1.2-06</td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td>1.3-01</td>
<td>1.3-02</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>1.3-03</td>
<td>1.3-04</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>1.3-05</td>
<td>1.1-05</td>
<td></td>
</tr>
</tbody>
</table>
## Information & Technology Strategic Plan for Milwaukee
For the period of July 1, 2005 to June 30, 2008

### Current Status

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Planning</th>
<th>Execution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ref #</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Reflection in 2008 Plan

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Planning</th>
<th>Execution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| GOAL 2 |

**Student Proficiency**
Students will continually develop their academic proficiency through effective and appropriate use of 21st century technology skills.

<table>
<thead>
<tr>
<th>Objective 2.1</th>
</tr>
</thead>
</table>

**Objective 2.1**
Publish by September 2007 technology skill sets that meet research-based standards and align with the MPS Learning Targets.

<table>
<thead>
<tr>
<th>Ref #</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5-08</td>
<td></td>
</tr>
</tbody>
</table>

**Implementation**

<table>
<thead>
<tr>
<th>Ref #</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1-02</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 2.2</th>
</tr>
</thead>
</table>

**Objective 2.2**
Increase by 25% the number of students supplementing face-to-face instruction and assessment with online and other technologies towards improving student achievement, closing the achievement gap, and increasing the graduation rate by June of 2008.

<table>
<thead>
<tr>
<th>Ref #</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2-01</td>
<td></td>
</tr>
<tr>
<td>2.2-02</td>
<td></td>
</tr>
<tr>
<td>2.2-03</td>
<td></td>
</tr>
<tr>
<td>2.2-04</td>
<td></td>
</tr>
<tr>
<td>2.2-05</td>
<td></td>
</tr>
</tbody>
</table>
### Information & Technology Strategic Plan for Milwaukee
For the period of July 1, 2005 to June 30, 2008

<table>
<thead>
<tr>
<th>GOAL 2</th>
<th>Current Status</th>
<th>Reflection in 2008 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2-06</td>
<td>Establish Guidelines for the Use of Assistive Technology Tools that Support Inclusion of Children With Disabilities in State Assessments</td>
<td>✓</td>
</tr>
<tr>
<td>Objective 2.3</td>
<td>Students will select the technology that best enables them to acquire information, communicate their knowledge and understanding of content, and solve problems.</td>
<td>✓</td>
</tr>
<tr>
<td>2.3-01</td>
<td>Ensure Critical Thinking by Students Concerning the Validity &amp; Ethical Use of Online Resources &amp; Utilize Effective Information Literacy Strategies</td>
<td>✓</td>
</tr>
<tr>
<td>2.3-02</td>
<td>Ensure Students Access to Opportunities to Apply a Wide Array of Technology Tools to Learning</td>
<td>✓</td>
</tr>
<tr>
<td>2.3-03</td>
<td>Expand Learning Options Available to Students Through Online Courses in Preparation for Post-Secondary Learning</td>
<td>✓</td>
</tr>
</tbody>
</table>

### GOAL 3
Access to Information Resources & Learning Tools
Students, staff, parents, and community will have equitable access to information resources and technology learning tools to construct knowledge as self-directed, continuous learners.

<table>
<thead>
<tr>
<th>Objective 3.1</th>
<th>Current Status</th>
<th>Reflection in 2008 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the number of schools that meet the goal of a ratio of students to computers equal to 3:1 from 53% of schools that have met this goal in 2004 to 65% of schools by August of 2008.</td>
<td>✓</td>
<td>3.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objective 3.1</th>
<th>Current Status</th>
<th>Reflection in 2008 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define &amp; Communicate Minimum Technology Standards</td>
<td>✓</td>
<td>3.1-01</td>
</tr>
<tr>
<td>Increase Equitable Network Access &amp; Availability</td>
<td>✓</td>
<td>3.1-02</td>
</tr>
<tr>
<td>Provide Ubiquitous and Equitable E-Mail Access</td>
<td>✓</td>
<td>N/A</td>
</tr>
<tr>
<td>Redistribution Model for Donated Computers</td>
<td>✓</td>
<td>N/A</td>
</tr>
<tr>
<td>Implement Alternative Delivery Methods of Curriculum and Courses</td>
<td>✓</td>
<td>3.1-04</td>
</tr>
<tr>
<td>Expand Equitable Access to Assistive Technology</td>
<td>✓</td>
<td>3.1-05</td>
</tr>
<tr>
<td>Provide Interactive Video Capabilities at Schools (Classrooms)</td>
<td>✓</td>
<td>3.1-06</td>
</tr>
<tr>
<td>Implement Network Switches at Schools</td>
<td>✓</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Information & Technology Strategic Plan for Milwaukee
For the period of July 1, 2005 to June 30, 2008

<table>
<thead>
<tr>
<th>Objective 3.2</th>
<th>Increase the capacity of the wide area network by 100% to improve availability and reliability in support of 24/7 operations by June 2008, at a 50% reduction in network operating and maintenance costs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2-01</td>
<td>Sustain Availability of Legacy Network During “In-Between” Stage</td>
</tr>
<tr>
<td>3.2-02</td>
<td>Complete Network Requirements Analysis</td>
</tr>
<tr>
<td>3.2-03</td>
<td>Implement New Wide Area Network (WAN)</td>
</tr>
<tr>
<td>3.2-04</td>
<td>Conduct Analysis of Network &amp; Performance Monitoring Requirements</td>
</tr>
<tr>
<td>3.2-05</td>
<td>Implement Network &amp; Performance Monitoring Measures</td>
</tr>
<tr>
<td>3.2-06</td>
<td>Conduct Feasibility Analysis of Reutilization of ITFS Channels</td>
</tr>
<tr>
<td>3.2-07</td>
<td>Maximize Utilization of Second Data Center</td>
</tr>
<tr>
<td>Objective 3.3</td>
<td>Increase the number of parents and community members with access to teaching, learning, and other MPS information resources.</td>
</tr>
<tr>
<td>3.3-01</td>
<td>Increase Utilization of Parent Link</td>
</tr>
<tr>
<td>3.3-02</td>
<td>Provide Parents Access to Student Information (Parent Assistant)</td>
</tr>
<tr>
<td>3.3-03</td>
<td>Increase Useful Parent Content in Portal</td>
</tr>
<tr>
<td>3.3-04</td>
<td>Increase Accessibility &amp; Availability of Recreation Activities</td>
</tr>
<tr>
<td>3.3-05</td>
<td>Collaborate Milwaukee Partnership Academy to Support Tutoring &amp; Family Literacy</td>
</tr>
<tr>
<td>3.3-06</td>
<td>Provide Mechanisms for Implementing Family Learning Events</td>
</tr>
<tr>
<td>3.3-07</td>
<td>Promote the Development of Information &amp; Technology Skills for Parents</td>
</tr>
<tr>
<td>Objective 3.4</td>
<td>Provide a secure networking and operating environment, ensuring that sensitive data and critical information resources are protected to maintain the privacy and confidentiality of student and staff records on an ongoing basis.</td>
</tr>
</tbody>
</table>
# Information & Technology Strategic Plan for Milwaukee

For the period of July 1, 2005 to June 30, 2008

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Planning</th>
<th>Execution</th>
<th>Action</th>
<th>Ref #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

## 3.4-01 Improve Adherence to CIPA Requirements by Enhancing Technology & Policies

3.4-02 Implement Additional Infrastructure Internal Controls

3.4-03 Implement Strategies for Effective Management of SPAM, Spyware & Viruses

3.4-04 Implement Encryption Technologies for Secure Access, Transmission & Storage

3.4-05 Implement Network Intrusion Detection System

3.4-06 Provide Education of Internet Safety to Staff, Students & Parents

### GOAL 4 Support Systems & Leadership

Technology systems to support visionary leadership and educator proficiency will be enhanced to improve student achievement and close the achievement gap.

#### Objective 4.1 Evaluate procedures and standards by December 2005 to confirm that they effectively meet the needs of an ever changing and evolving technology landscape and are aligned to support the improvement of student learning and staff knowledge.

4.1-01 Establish Written Standards & Practices for Technology

4.1-02 Revise School Educational Plan Development Process

4.1-03 Establish District Recommended “Menu” of Educational & Instructional Software

4.1-04 Improve Communication Strategies in the Dissemination & Create Awareness of Policy & Procedural Changes

4.1-05 Implement a Funding Strategy that Prioritizes & Coordinates Technology Investments

4.1-06 Standardizing Procurement Purchasing Strategies related to Computers & Software
<table>
<thead>
<tr>
<th>Objective 4.2</th>
<th>Improve interoperability and integration among core district business applications for the purpose of (a) increasing information sharing opportunities; (b) improving data quality; (c) developing resource efficiencies; and (d) laying the foundation for real-time data-driven decision-making.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2-01</td>
<td>Develop Interoperability Strategies to Improve Data Quality &amp; Reliability</td>
</tr>
<tr>
<td>4.2-02</td>
<td>Integrate Data Systems to Improve Student Learning</td>
</tr>
<tr>
<td>4.2-03</td>
<td>Improve the Capability of the MPS Data Warehouse as an Effective Decision Support Analysis Tool</td>
</tr>
<tr>
<td>4.2-04</td>
<td>Expand and Maximize the Capability of the MPS Portal</td>
</tr>
<tr>
<td>4.2-05</td>
<td>Provide Professional Development Opportunities for District Staff to Effectively Use Technology Tools</td>
</tr>
<tr>
<td>Objective 4.3</td>
<td>Design and implement an Integrated Achievement and Instructional Management System by June 2008 that provides reliable and timely student performance data to monitor progress, inform instruction and communicate results.</td>
</tr>
<tr>
<td>4.3-01</td>
<td>Explore Possibilities of an Integrated Achievement &amp; Instructional Management</td>
</tr>
<tr>
<td>4.3-02</td>
<td>Improve Currents Systems for Interoperability with the Integrated Achievement &amp; Instructional Management System</td>
</tr>
<tr>
<td>4.3-03</td>
<td>Provide Professional Development to District Staff to Effectively Use the Integrated Achievement &amp; Instructional Management System</td>
</tr>
<tr>
<td>Objective 4.4</td>
<td>Establish a centralized library automation system for all of the library media centers in the district by Fall 2008.</td>
</tr>
<tr>
<td>4.4-01</td>
<td>Establish a Conversion Plan to an Enterprise Library System</td>
</tr>
<tr>
<td>4.4-02</td>
<td>Provide Professional Development Support for District Staff on the New Library Automation System</td>
</tr>
<tr>
<td>Objective 4.5</td>
<td>Increase the capacity of staff to demonstrate leadership in the understanding and application of technology and to use it to achieve personal and professional goals.</td>
</tr>
<tr>
<td>4.5-01</td>
<td>Develop Leadership Strategies to Improve Decision Making</td>
</tr>
<tr>
<td>4.5-02</td>
<td>Provide Professional Development Opportunities for District Staff to Effectively Use Technology Tools</td>
</tr>
</tbody>
</table>
### Information & Technology Strategic Plan for Milwaukee

For the period of July 1, 2005 to June 30, 2008

<table>
<thead>
<tr>
<th>Ref #</th>
<th>Current Status</th>
<th>Reflection in 2008 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Analysis</td>
<td>Planning</td>
</tr>
<tr>
<td>4.5-01</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>4.5-02</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>4.5-03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5-04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5-05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5-06</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **4.5-01** Implement a Continuum for Self Evaluation of Technology Skills
- **4.5-02** Publish Technology Skills Required for Administrators at All Levels
- **4.5-03** Implement an Online Professional Growth Recording System
- **4.5-04** Develop Training Options for District & School-Based Administrators to Enhance Technology Skills
- **4.5-05** Integrate Accountability in Design Decisions for Technology & Classroom Learning
- **4.5-06** Promote Professional Development Training for Technology Staff
**Student and Educator Proficiency through Effective Teaching and Learning Practices**

Since 2000, MPS technology leaders have been aware that education in the 21st century will change rapidly from traditional methods of teaching and learning. Through the appropriate use of current technologies to support learning, student motivation will increase as they accelerate their grasp of complex concepts and experience opportunities to work as adults work in collaborative, problem-centered settings. MPS has made major investments in professional development, infrastructure development, online content and collaboration space access, and data systems to expand learning opportunities for every child in Milwaukee.

Since research has shown that students of all ages and abilities that are educated in technology-rich environments have increased achievement in all major subject areas and improved attitudes toward learning and self concept, educational leaders in the 21st century will need to continually adopt and adapt new learning strategies that are supported by technology (Schacter, 2005). Teachers will need to incorporate data-driven decision making to improve learner success. They will need to develop methodologies for assuring the learning environment keeps pace with rapidly changing opportunities. Educators in Milwaukee will need to learn to effectively use the student data available on the new data warehouse and benchmark assessment systems to make decisions about strategies in the classroom that will not leave any child behind.

Learning can no longer be limited to the teacher’s experiences, nor by the physical resources present in the classroom. High quality learning experiences are also available, for example, through the Internet. 100% of MPS schools provide every teacher with Internet access at their desk, and all classrooms with student computers have Internet access. This provides alternatives to traditional direct instruction for students and will increase the number of students having successful learning experiences. MPS is planning to use funding provided by the Microsoft Settlement to guarantee student access to computers at a 3:1 ratio at all MPS schools. In order to guarantee that all MPS grade eight students can meet technology literacy requirements, all students must experience the ubiquitous use of technology as a learning tool in their middle school years. Strategies to achieve these goals, such as the 1:1 project providing laptops to all sixth grade students, are outlined in the plan objectives that follow.

Educator proficiency in the integration of library media staff and resources is also an essential ingredient in the formula to improve student proficiency. All MPS schools have a library media center with Internet access. In order for students to practice and strengthen their knowledge in the area of information and technology literacy, students and staff need access to the full complement of physical and electronic resources available. This further supports the need for the central library management solution, which is currently being implemented districtwide. In fall of 2007, a central solution for managing library media resources will provide district-wide web access to every school library’s card catalog. Resources will be managed and available across the district and access to global data bases such as those found at universities and the Library of Congress will be available to all MPS staff and students. Students and teachers working together, integrating library media resources and staff in the educational process, will bring about increased student technology proficiency.

Collaborative projects, such as Enhancing Education Through Technology, Six Traits and Technology, the Virtual Induction Program, and Professionals Revitalizing Online have all increased teacher skills and created teacher leaders who have become school level trainers and cheerleaders for the potential that technology has for urban students. In a decentralized district, the 2005-2008 Information and Technology Strategic Plan established standards where necessary, but allowed schools to experiment with emerging technologies, develop programs that met their students’ talents and needs, and choose educational software that allows them to meet state and technology standards. Students experience a range of technology, including computer aided drafting, video conferences that allowed them to follow the travels of some of their classmates on a schooner to the Bahamas, and hands-on computer repair and programming through the Dell TechKnow Program. Expansion of these opportunities to reach all populations of students in the district is an essential strategy for closing gaps that are reflected in our achievement data. Project-based learning supported by technology promotes engaged learning for diverse learners. Utilizing a Universal Design for Learning approach, which plans for all styles and abilities of learners, includes technology as a tool to allow all students to be successful and reach their potential. MPS needs to increase the use of technology as communication and collaboration
tools to foster language development and problem solving and to support successful interaction of all populations in the classroom. Assistive strategies that meet the needs of all students must be employed to support interaction of all populations in the classroom. (Standard 6 of PI-34)

In the past, MPS has used the enGauge Online Assessment Profile survey to measure the effective use of educational technology and profiled information regarding how respondents prioritized both 21st century skills and the importance of technology integration in various content areas. The scale ranged from awareness, to adoption, to exploration and finally to transformation. The enGauge framework describes six system-wide conditions that are essential for the effective use of technology. In these six Essential Conditions: Forward Thinking; Shared Vision; Effective Teaching and Learning Practice; Educator Proficiency; Digital-Age Equity; Robust Access Anywhere, Anytime; Systems and Leadership, respondents’ average response ranged from 2.87 to 3.45 on a 5 point scale. Results of the survey categorized the respondents as either at the high end of the Adoption level or strongly in the Exploration level in the use of educational technology.

Students surveyed using the enGauge online survey reported that the alignment between content, instruction and assessment and the use of technology for learning was at a 3.37 on a 5-point scale. This indicates a strong level of exploration with room to grow to reach a 5 or transformation. Students also indicate a 3.15 level in the implementation of real-world projects that address meaningful issues and use technology for authentic tasks and assessment. The range of technology tools available to them for learning and showing what they know was also scored at a level between Adoption and Exploration with a 3.14 on a 5-point scale.

The overall enGauge Online Assessment Profile for MPS conducted in 2003-04 with 53 schools MPS appeared encouraging, but the use of this survey has been limited to schools participating in the EETT grant. To get feedback from enGauge on the effectiveness of district-wide professional development on educator proficiency has become cost prohibitive. MPS needs to identify a new tool or method that can be used to measure, record, and create future plans around the technology proficiency of all MPS educators. The proficiency of educators to effectively integrate the use of technology into their teaching and learning practices is essential to further growth for MPS. Most of the enGauge indicators for the small group surveyed in this area yielded scores between Adoption and Exploration with the lowest being 2.7 for the ability of educators to apply technology to support the assessment process, and the highest being 3.17 for the ways educators are using technology to increase professional productivity and access resources for teaching and learning. This suggests that, in general, educators are using data to systematically align curriculum, instruction, and assessment to digital age goals.

Technology is beginning to visibly bring value to Pre-K-12 education. The results indicated that while some pockets of excellence exist, innovations in learning and teaching with technology has not proliferated beyond the adoption level to district-wide fruition. Though a group of schools representing about 25% of the district’s schools is a valid sample, the district is interested in the technology proficiency of all of their students and staff. An annual survey tool or test will need to be developed or added to surveys already used in the district to provide current information about the progress and continuing needs in the area of educator technology proficiency.

In a large urban district, there exists a wide range of technology literacy and integration into the curriculum. MPS needs to increase the ability of teachers to use a variety of instructional strategies and technological resources to create learning opportunities that are cross-curricular and adaptive to learners with diverse styles and from a range of backgrounds. (Standards 3 and 4 of PI-34) Professional development is a key component to increase educator proficiency. MPS needs to increase the district’s capacity to sustain activities through teacher leaders, who are highly literate in integrating technology across the curriculum, and through self-paced professional development opportunities that allow just in time training to teachers based on needs. Therefore, the use of the MPS Portal, online graduate level courses, online chats, video-conferencing, and web-based streaming digital video have become integral components. These components are used to support understanding and application of aligned curriculum, assessment, and instruction and to increase the technology literacy of teachers to advance student achievement. Self-paced modules that allow teachers to
access just-in-time training are currently being developed by district technology leaders to provide an additional way for all educators to receive the training needed to move them along the proficiency continuum.

The implementation of the central library automation system began in June 2007. To support the central library management solution at the district level, a project manager was hired to facilitate the installation. Fifty percent of our schools were identified as help sites either because of the lack of expertise at the local level to perform inventory or the existing library system was incompatible with the new system. Teams of support personnel were dispatched to 17 schools and weekly status reports showed that the quality of data in many of those schools was not sufficient to merge with the central automation system. Extensive weeding and copy cataloging was done on site to improve the quality of the data to convert the highest quality of data possible to the central automation system. This first phase of the project will have roughly 110 schools converted and the remaining 30 will be converted by November 2007. Data quality in the integration of library media resources is also an essential ingredient in the formula to improve student proficiency. To maintain the integrity of data and optimize the efficiency of the central automation system, additional support at the district level is evident.

**Educator Proficiency Identified Needs**

1. *Teacher technology literacy to advance student achievement* – MPS needs to increase the ability of teachers to use a variety of instructional strategies and technological resources to create learning opportunities that are cross curricular and adaptive to learners with diverse styles and from a range of backgrounds.

2. *Communication, collaboration, and modification* – MPS needs to increase the use of technology as communication and collaboration tools to foster language development and problem solving and to support successful interaction of all populations in the classroom.

3. *Instructional Strategies* – MPS needs to provide sustained opportunities for professional development which models multiple methods of delivery.

4. *Building Teacher Capacity* – MPS needs to increase the district’s capacity to sustain activities through teacher leaders highly literate in integrating technology across the curriculum and self-paced professional development opportunities that allow just in time training to teachers based on needs.

5. *Library Media Support* – MPS needs to ensure appropriate library media support is available to support schools and data quality from the district level and at the school level.

6. *Using data to inform professional development* – MPS needs to identify a new tool or method that can be used to measure, record, and create future plans around the technology proficiency of all MPS educators.

7. *Using data to inform instruction* – Educators in Milwaukee will need to learn to effectively use the student data available on the new data warehouse and benchmark assessment systems to make decisions about strategies in the classroom that will not leave any child behind.

**Student Proficiency Identified Needs**

1. *Mastery of state academic standards and technology literacy* – MPS students need to meet challenging state academic standards and technology literacy requirements.

2. *Teacher technology literacy to advance student achievement* – MPS needs to increase the proficiency of teachers to use a variety of instructional strategies and technological resources to create learning opportunities that are cross curricular and adaptive to learners with diverse styles and from a range of backgrounds.

3. *Communication, collaboration, and modification* – MPS needs to increase the use of technology as communication and collaboration tools to foster language development and problem solving and to support successful interaction of all populations in the classroom.

4. *Instructional Strategies* – MPS teachers need to use multiple methods of delivery to support student mastery of academic standards and technology proficiency for all learners.
5. **Building Student Capacity** – MPS needs to increase the capacity of students to select and use appropriate technology and resources to support learning.

6. **Using data to inform instruction** – Educators in Milwaukee will need to learn to effectively use the student data available on the new data warehouse and benchmark assessment systems to make decisions about strategies in the classroom that will not leave any child behind.

**Access to Information Resources and Learning Tools**

The district maintains two hardware standards for desktop computers and laptops, the PC Windows platform and the Macintosh platform. The district goal is to maintain a standard of 3:1 (students to computers) ratio. To ensure that the district exceeds or maintains this standard the district will use the Microsoft Lawsuit settlement vouchers to refresh computers in all schools to minimum standards. The objective is to increase the number of schools that have a 3:1 ratio of computers to students. Today there are over 18,500 Windows PC’s and over 10,000 Macintosh computers across the district.

The district operates two core data centers standardizing on HP, SUN and Windows hardware. District technology staff support operating systems that include HP UNIX, SUN Solaris, Windows 2003, and Red hat LINUX operating systems. In addition the district supports several database management systems including Oracle RDBMS and Microsoft SQL server. In order to maintain a 99.5% uptime, the district must continue to provide professional development to build and enhance the skill sets for technology staff to support and provide a stable computing environment for the district.

The district successfully upgraded its Wide Area Network (WAN) in July of 2006. The upgrade of the network positions the district to continue to deliver high quality data, voice and video services to our students and staff. With the upgraded infrastructure the charge is now to maintain the reliability and availability of the district’s WAN. The district is striving for 99.5% uptime. In order to meet this goal, the district must improve its monitoring capabilities to enable quick identification of network problems. This can be done by continuing to develop current monitoring tools while investigating, testing, and piloting others. The district needs to take advantage of current monitoring tools in place such as Cisco Works, and PRTG. These tools can monitor network devices and bandwidth usage enabling the district to be proactive in terms of minimizing network problems. In addition, the district must continue strengthen current relationships with network partners Cisco, AT&T and the AT&T ENOCH, to work closely in adhering to network service level agreements established.

Wireless networks continue to proliferate throughout the district; many schools have purchased and installed individual wireless access points for classrooms, labs, libraries, cafeterias and computers-on-wheels. The wireless access points are mainly installed where wired connections are not installed or if laptop computers are being used. The district has set the standards for installation, security and management of these devices. The district needs to continue to strengthen the security and management of these devices to ensure that wireless implementation expansion efforts are uniform and comply to standards.

The district will continue to explore and pilot the development of a wireless broadband network to extend access to network resources for underserved students and their families. The district has partnered with the Milwaukee Area Technical College and the University of Wisconsin-Milwaukee to lease its collective 12-channel EBS spectrum to a commercial communications vendor for development of a WiMAX wireless broadband service. The district will continue to explore this valuable resource to provide access to network resources beyond the classroom for all students, parents and staff.

As the district’s network and Internet continue to be an integral part of the educational process, the district must be cognizant of potential threats to its internal and external networks. Strengthening the district’s position based on industry standards and best practices will ensure a safe and secure computing environment for all district students and staff.
Access to Information Resources Identified Needs

1. **Equitable access**—MPS needs to continue to strive for equitable access to technology resources for all students and staff to reach a ratio of students to computers equal to 3:1.

2. **Technology Staff Capacity**—MPS needs to provide and promote training to technology staff, in an effort to build a self-sustainable technology organization.

3. **Wireless Communications**—MPS needs to reduce large capital expenditures for electrical and wiring infrastructure by pursuing wireless technology to cost effectively extend its network.

4. **Security**—MPS needs to provide secure networking and operating environments to ensure that sensitive data and critical information resources are protected.

Resources and Fixed Assets

The Division of Technology supports one of the largest network infrastructures in the State of Wisconsin. The Division supports over 200 school sites, two core Data Centers, 40,000 computers and over 500 network devices. The core computing environment consists of over 200 servers (Dell, SUN and HP). The Division also maintains data backups for the two core data centers and all school enterprise servers.

The staff that support the infrastructure (84) include; Technology Support Analysts, Application Programmers, Project Managers, Database Administrators, Systems Programmers, Network Specialists, Desktop Technicians and Telecom Specialists.

A detailed account of the district’s technical infrastructure can be found in the MPS Enterprise Technical Infrastructure companion document.

Support Systems and Leadership

Emphasis on effective practice for the integration of technology to close achievement gaps must come from all levels in the district. This plan aligns technology with the district’s initiatives so that all components have top down support, and technology is not a separate entity in the educational process. Administrators, teachers and other district staff must realize the important role that information literacy and technology play in a successful school. In fall of 2007, the district will expand the School Educational Plan development process to require schools to address how they will effectively utilize technology to support them in achieving teaching, learning, and achievement goals.

Engauge results from a group of schools representing about 25% of the district’s schools show that the perception of funding of technology in the district is a concern with a mean score of 2.48 on a scale of 1-5. Both total cost of ownership and equitable distribution of technology resources are embedded in this understanding. Positive results were indicated in the area of professional development opportunities to build capacity and advance the technology vision for the district. Respondents rated this average of 3.74, which is approaching Transformation on the enGauge scale. District staff and students who took the online survey were aware of the district vision and its development by stakeholders with scores in all five indicators in this area in the 2.86 to 2.97 range. More effort to involve everyone in the formulation of the evolving vision and to communicate that vision clearly to the district and community is essential to the continued success of the district’s efforts.

Results for the MPS technology survey in the Fall of 2004 showed that though the district has established standard enterprise systems for comprehensive tasks such as school attendance, employee payroll and financial transactions, there are many point solutions that vary from school to school in the academic and teacher level functions. A clear example is the use of a variety of electronic grading systems, some that allow web access to parents and some that are stand-alone products. These point solutions are often costly alternatives and create inconsistency for parents who have numerous children enrolled in multiple schools in the district. As a district, more applications need to be standardized to provide schools with guidance, technical support, and fiscal relief. In fall of 2007 MPS established the district’s student management system, eSIS, as the standard for all schools for attendance, report cards, and electronic grade book. MPS has also
identified the need to gather information on technology use from all employees on a biannual basis. This survey will be developed during the 2007-2008 school year for implementation in the 2008-2009 school year.

Several years ago, MPS collaborated with the Milwaukee Partnership Academy to create a new reporting system for staff, administrators and parents. This system, which provided individual test profiles for students as well as class and school aggregations, also identified educational strategies and resources for parents.

In order to fully comply with NCLB assessment requirements regarding customized assessments in reading and math, the Department of Public Instruction’s assessment system was modified for the 2005-06 school year. Assessments in reading and math were developed for grades 3, 5, 6, and 7 to complement existing assessments at grades 4, 8 and 10. These assessments replaced the district’s adopted test, the TerraNova, to avoid duplication of effort. Unfortunately, the new assessments were not on the same vertical scale as the old system, rendering a portion of the district’s MPA Report system ineffective. Staff access to the MPA Report system was removed during 2006-07 to avoid confusion.

During 2007-2008, application development staff will re-map the new assessment data to the new data warehouse structures to the MPA Report system to support use of the MPA Parent Report. Functionality once present in the MPA Class and School Reports has now been replaced by the new data warehouse reports, so additional re-mapping to support staff use will not be required.

All traditional MPS sites servicing students in grades 7 through 12 were instructed by the Superintendent’s office to budget for .2 or higher certified library media specialist for the 2007-2008 school year. This mandate has increased the number of K-8, middle and high schools that are serviced by a certified library media specialist. It is also encouraging to note that charter schools are seeking the services of a certified library media specialist to add value to their school’s educational program. Moreover, the addition of one library media specialist at the district level has increased library media support and site visits for all schools. The district is moving toward total compliance in the area of library media services.

The following chart shows the FY08 (2007-08) projected number of schools to be serviced by a site-based certified library media specialist compared with FY07 (2006-07). Please note that arrangements have been made to share the services of a certified library media specialists in buildings where there are two or more schools.

<table>
<thead>
<tr>
<th>FY08 Projected number of certified library media specialists in schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional High (9-12)</td>
</tr>
<tr>
<td>17 of 19 schools</td>
</tr>
<tr>
<td>Charter High (9-12)</td>
</tr>
<tr>
<td>3 of 12 schools</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FY07 Number of certified library media specialists in schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional High (9-12)</td>
</tr>
<tr>
<td>13 of 20 schools</td>
</tr>
<tr>
<td>Charter High (9-12)</td>
</tr>
<tr>
<td>2 of 11 schools</td>
</tr>
</tbody>
</table>
The district started a Technology Coordinator (TC) Buyback Services Program on a trial basis in the 2005-2006 school year. This program provides a way for schools to support their technology purchases. The district supports staff computers and printers to ensure that business applications are always available and operating. Workstations used for library checkout and for student lookup are supported under this program. The TC Buyback Services Program adds student machine support. Machines are serviced on-site and remotely.

For the 2006-2007 school year, MPS had 71 schools in the Technology Coordinator Buyback Services Program. For the 2007-2008 school year there are already over 100 schools in the Technology Coordinator Buyback Services Program.

The district standardization process on the Windows and Macintosh platforms has allowed schools to move former TC’s back into the classroom as full-time teachers or paraprofessionals. The schools’ TC contacts the MPS Support Center to log issues that need to be addressed into the HEAT (Helpdesk Expert Analytical Tool) system. The proper support person is then contacted to resolve the school’s issue. Rather than the “techie” that maintains the machines, the TC in many schools has become the communicator of technology challenges or problems for a school. This has created the opportunity to change roles and responsibilities for this technology leader.

In the past the district has held 4-6 meetings each year for Technology Coordinators to pass along information about network infrastructure, standards and procedures. In the last couple of years these meetings were also broadcast live and archived for viewing using Mediasite Live. In part, due to the success of the TC Buyback Services Program, the TC meetings will evolve into ongoing professional development for Instructional Technology Leaders; the emphasis now being on integrating technology into the schools’ curriculum. Instructional Technology Leaders will focus on helping teachers successfully integrate and incorporate technology into the curriculum.

Likewise, central library automation will facilitate faster and more efficient support of library collection management freeing library media specialists for collaboration with classroom teachers on curriculum and teaching to standards. The library media specialist may then function as the Instructional Technology Leader for the school. As the Instructional Technology Leader concept materializes in 2007-2008, there is a need to document best practices of Instructional Technology Leaders and changes in teachers’ instructional practices districtwide. Students will have the capacity to tap into resources from Milwaukee Public Library and local universities and the MPS Virtual Library with ease. Greater access and higher utilization of educational resources will ultimately lead to improved student learning throughout the district.

MPS has met one of the objectives of the previous Information and Technology Strategic Plan by establishing an implementation plan for the conversion to an enterprise library and media center operating system. In the summer of 2007 the district began converting school libraries to the new system. Full conversion is anticipated by fall 2008. Training is needed to support successful implementation of the new library automation system. Consistent technology will allow for centralized support and implementation of a standard district program.

Formative evaluator and Harvard Graduate School of Education faculty member, Ilona Holland, worked with the MPS Learning Technologies Team in 2004-2005. Dr. Holland’s role focused on facilitating the development of cadres for the community of practice and the integration of feedback mechanisms therein. Much of her work was in guiding and evaluating the professional development for online cadre leaders.

Based on Dr. Holland’s research and evaluations, the Professional Support Portal project gave way to building an online community to serve all teachers in the district. This entails selection of online leaders, ongoing training of online leaders, and support for the online leaders and rollout plans for all teachers in the district. Continued professional development opportunities for online leaders will need to be implemented.
Vision and Leadership Identified Needs

1. Integrated Resource Information System (IRIS)—MPS needs to improve interoperability and integration among core district business applications and implement an integrated student achievement and instructional management system.

2. Review Policies, Procedures, and Standards—MPS needs to review, deploy and communicate policies, procedures and standards to effectively meet the needs of an ever changing and evolving technology landscape, aligned to support the improvement of student learning and staff knowledge, on a continuous basis.

3. Library Media Support – MPS needs to ensure appropriate library media support is available to support schools and data quality from the district level and at the school level.

4. Enterprise Library System -- MPS needs to continue conversion to an enterprise library and media center operation system for all of the library media centers in the district and training is needed to support successful implementation of the new library automation system.

5. Technology Staff Capacity—MPS needs to provide and promote training to technology staff, in an effort to build a self-sustainable technology organization

6. Online Learning Communities—MPS needs to develop a structure of online communities that serve all teachers, administrators and staff by providing access to information, professional development, and opportunities for collaboration.

7. Building Capacity – MPS needs to increase the district’s capacity to sustain activities through teacher leaders highly literate in integrating technology across the curriculum.

8. Using data to inform instruction – School Leaders in Milwaukee will need to learn to effectively use the student data available in eSIS and on the new data warehouse and benchmark assessment systems to make decisions about strategies in the classroom that will not leave any child behind.

9. Dissemination of Information – MPS needs to maximize the capability of the MPS Portal as an effective communication environment, a useful collaboration tool, and a central access point to key applications.
No Child Left Behind Alignment

MPS is working towards Advanced Implementation when aligning the district’s technology implementation with the Technology Framework for No Child Left Behind Success. The table below illustrates the district’s current status in each of the 10 NCLB components included in the National Education Technology Plan released in January 2005 by the U. S. Department of Education.

<table>
<thead>
<tr>
<th>#</th>
<th>NCLB Components</th>
<th>Implementation²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Basic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 2</td>
</tr>
<tr>
<td>1</td>
<td>Infrastructure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A Technology Infrastructure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B Network Connectivity</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Integration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C Data Systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D Electronic Exchange of Records</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Interoperability</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E Automated Data Systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F Data Quality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>G Data Standards</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H Academic / Other Performance Standards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I Aligned Assessments / Measures</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Security</td>
<td></td>
</tr>
<tr>
<td></td>
<td>J Data Consolidation, Security and Access</td>
<td></td>
</tr>
</tbody>
</table>


² Each implementation area is subdivided into three stages: Basic, Proficient, and Advanced.
**Grade 8 Technology Literacy Requirements – Implementation and Timeline**

Milwaukee Public Schools (MPS) compliance with No Child Left Behind requirements for Information and Technology Literacy were met in the 2005-06 and 2006-07 school years. The process will be reviewed and enhanced during the 2007-08 school year for revised implementation in the 2008-09 school year.

**YEAR ONE**  
(2005-06 School Year)

During this school year, technology leaders in MPS identified criteria to determine the percentage of eighth grade students who are technology literate. A portfolio was created with the criteria printed on the outside for teacher to rate their grade eight students on the six (NETS) National Educational Technology Standards, their performance indicators, and descriptors of what students should know and be able to do by the end of eighth grade. Information about this new requirement was disseminated via literacy coaches, implementers, technology coordinators, and other school leaders. Training for the use of the SPS recording system was provided centrally to a representative from each school. Schools used a variety of projects and topic specific instructional plans to provide students opportunities to meet all of the six standards.

MPS schools with grade 8 students used the online reporting system, SPS, to record their students as “yes” technologically literate or “no” not technologically literate. Reports showed that 78% of 6538 MPS grade eight students were rated “yes” in June of 2006.

**YEAR TWO**  
(2006-07 School Year)

The process defined and implemented in the 2005-06 school year continued to be the required process for all MPS schools with grade eight students in the 2006-07 school year. Reports showed that 85% of 6724 MPS grade eight students in June of 2007 were rated “yes”.

**YEAR THREE**  
(2007-08 School Year)

This will be the final year that schools will rate students’ technology literacy using the process defined in the 2005-06 school year. Due to the release of the new NETS for Students in 2007, technology leaders in MPS will review and revise the process to be implemented in the 2008-09 school year. This revision aligns with the school district’s adoption of a new Information and Technology Strategic Plan for MPS covering the years 2008-2011.

The new process includes:

- Identifying middle school projects that will be enhanced with technology for teacher to choose from in order to help their students meet this requirement.
- Developing criteria for acceptable educator-designed projects, aligned with the NETS, to be used in place of district identified projects.
- Defining rubrics that will allow teachers to identify and rate student technology proficiency in the identified projects and in teacher written projects.
- Monitoring of school compliance with recording requirements by Central Services staff.
- Publishing a handbook by August of 2008 of the required grade 8 technology literacy implementation plan for MPS.
## D. GOALS AND OBJECTIVES

<table>
<thead>
<tr>
<th>GOALS</th>
<th>OBJECTIVES</th>
</tr>
</thead>
</table>
| **GOAL 1** <br>Educator Proficiency                                   | 1.1 Increase usage of an online registration system by 10% each year to collect and use data on staff development to improve teaching and learning, data-based decision-making, resource allocation, accountability, and delivery of services. (WTS 7,9,10)  
1.2 Increase the use of information and technology resources for collaboration, instruction, assessment, and instructional management by teachers, administrators and other district staff by 10% each year. (WTS 1,3,4,6,7,8)  
1.3 Build the capacity of the district to use online communities and other technologies to support teachers, administrators, and pupil services employees to achieve certification and licensure under PI-34. (WTS 2,5,7,9,10)  
(Objectives aligned with Wisconsin Teacher Standards (WTS) See Appendix.) |
| **GOAL 2** <br>Student Proficiency                                    | 2.1 Increase to 100% the eighth grade students who are technologically literate by June of each school year and continue this progress in grades 9-12.  
2.2 Increase by 10% annually the number of students using online and other technologies towards improving achievement, closing achievement gaps, and increasing the graduation rate by June of 2011.  
2.3 Students will select the technology that best enables them to acquire information, communicate their knowledge and understanding of content, and solve problems at a higher level of critical thinking.  
2.4 Build the capacity of MPS families to use technologies to support student success. |
| **GOAL 3** <br>Access to Information Resources and Learning Tools      | 3.1 Increase the number of schools to meet the goal of a ratio of students to computers equal to 3:1 to 90% by 2010.  
3.2 Maintain and improve the availability and reliability of network services to schools, in support of 99% network uptime for 24/7 operations.  
3.3 Maintain and improve the availability and reliability of core district application resources and voice services – supporting primary school and business functions, in support of 99% user productivity uptime during primary business hours.  
3.4 Create operating efficiencies in the management, administration and maintenance of key aspects of technical operations/functions, in order to provide and sustain a high level of quality service, in support of increasing educational and business demands of technology.  
3.5 Increase the number of parents and community members with access to teaching, learning, and other MPS information resources.  
3.6 Provide a secure networking and operating environment, ensuring that sensitive data and critical information resources are protected to maintain the privacy and confidentiality of student and staff records on an ongoing basis. |
| **GOAL 4** <br>Support Systems and Leadership                         | 4.1 Develop and implement by June of 2011 a comprehensive integrated resource information system (IRIS) to address all key elements of resource use at the district, school, classroom, and student levels.  
4.2 Monitor and enforce policies, procedures and standards to effectively meet the needs of an ever changing and evolving technology landscape and support the improvement of student learning and staff knowledge.  
4.3 Increase by 10% annually student and educator use of information resources through implementation of a centralized library automation system for all of the library media centers in the district by Fall 2008.  
4.4 Increase the capacity of staff to demonstrate leadership in the understanding and application of technology and to use technology to achieve personal and professional goals. |
## E. IMPLEMENTATION ACTION PLAN

### NEED STATEMENT(S):

- **Teacher Technology Literacy To Advance Student Achievement** – MPS needs to increase the ability of teachers to use a variety of instructional strategies and technological resources to create learning opportunities that are cross curricular and adaptive to learners with diverse styles and from a range of backgrounds.
- **Communication, Collaboration, And Modification** – MPS needs to increase the use of technology as communication and collaboration tools to foster language development and problem solving and to support successful interaction of all populations in the classroom.
- **Instructional Strategies** – MPS needs to provide sustained opportunities for professional development which models multiple methods of delivery.
- **Building Teacher Capacity** – MPS needs to increase the district’s capacity to sustain activities through teacher leaders highly literate in integrating technology across the curriculum and self-paced professional development opportunities that allow just in time training to teachers based on needs.
- **Library Media Support** – MPS needs to ensure appropriate library media support is available to support schools and data quality from the district level and at the school level.
- **Using Data To Inform Professional Development** – MPS needs to identify a new tool or method that can be used to measure, record, and create future plans around the technology proficiency of all MPS educators.
- **Using Data To Inform Instruction** – Educators in Milwaukee will need to learn to effectively use the student data available on the new data warehouse and benchmark assessment systems to make decisions about strategies in the classroom that will not leave any child behind.

### GOAL 1: Educator Proficiency

Administrators, teachers, and staff will continually develop information and technology proficiency to enhance their effectiveness, increase student achievement and close achievement gaps.

*(Objectives aligned with Wisconsin Teacher Standards (WTS) See Appendix.*)
## Objective 1.1:
Increase usage of an online registration system by 10% each year to collect and use data on staff development to improve teaching and learning, data-based decision-making, resource allocation, accountability, and delivery of services. (WTS 7,9,10)

### Evaluation Method:
- Usage reports generated from the MPS online registration system.
- Teacher reported use of new instructional practices via the instructional practices survey.
- Staff development evaluations.
- District analysis of training, learning walk and student outcome data connections.
- Employee reported use of technology via a biannual employee technology survey.

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1-01</td>
<td>Provide a web-based professional development management system that will facilitate registration and confirmation to users, provide communication and data collection capabilities to district and school leaders.</td>
<td>Ongoing 2007-2011</td>
<td>Division of Technology Learning Technologies</td>
<td>Operations Fund (staff time) ESEA Titles I,II-A, II-D</td>
</tr>
<tr>
<td>1.1-02</td>
<td>Provide a centralized professional development registry including an evaluation tool that can be used by district employees to make informed decisions regarding the quality of staff development offerings and allow MPS to track employee satisfaction and participation outcomes.</td>
<td>Complete by Fall 2008</td>
<td>Division of Technology Learning Technologies Instructional Leadership and Support Research and Assessment</td>
<td>Operations Fund (staff time) ESEA Titles I,II-A, II-D</td>
</tr>
<tr>
<td>1.1-03</td>
<td>Create a seamless connection between professional development tools and resources and district and school improvement plans to ensure student performance and district operations data is incorporated in professional development planning.</td>
<td>Spring 2009</td>
<td>Division of Technology Learning Technologies Instructional Leadership and Support Finance and Operations</td>
<td>Operations Fund (staff time) ESEA Titles I,II-A, II-D</td>
</tr>
<tr>
<td>1.1-04</td>
<td>Create a comprehensive one-stop website for employees to access professional development tools.</td>
<td>Fall 2008</td>
<td>Division of Technology Learning Technologies Instructional Leadership and Support</td>
<td>Operations Fund (staff time) ESEA Titles I,II-A, II-D</td>
</tr>
<tr>
<td>1.1-05</td>
<td>Provide a portable, centralized process for employees to document their career portfolios.</td>
<td>Fall 2010</td>
<td>Learning Technologies Instructional Leadership and Support Human Resources</td>
<td>Operations Fund (staff time) ESEA Titles I,II-A, II-D</td>
</tr>
<tr>
<td>1.1-06</td>
<td>Provide training in the use of web-based professional management systems and tools to support all stakeholders.</td>
<td>Ongoing 2007-2011</td>
<td>Division of Technology Learning Technologies Instructional Leadership and Support Human Resources</td>
<td>Operations Fund (staff time) ESEA Titles I,II-A, II-D</td>
</tr>
<tr>
<td>#</td>
<td>ACTIVITIES</td>
<td>TIMELINE</td>
<td>RESPONSIBILITY AREA</td>
<td>BUDGET – RESOURCES NEEDED</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>1.1-07</td>
<td>Expand the selection of online undergraduate and graduate level courses through collaboration with the Milwaukee Partnership Academy and other community partners.</td>
<td>Ongoing 2007-2011</td>
<td>Instructional Leadership and Support Teaching and Learning Bilingual/Multicultural Education; Early Childhood; Assessment and Accountability; Special Services All Areas</td>
<td>Operations Fund ESEA Title II-D Private grant funds</td>
</tr>
<tr>
<td>OBJECTIVE 1.2:</td>
<td>Increase the use of information and technology resources for collaboration, instruction, assessment, and instructional management by teachers, administrators and other district staff by 10% each year. (WTS 1,3,4,6,7,8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| EVALUATION METHOD: | - Measure and report changes in annual usage of information and technology tools.  
- Usage reports generated from the MPS online registration system (ENROLL)  
- Usage reports generated from the MPS learning management system (Moodle)  
- Teacher reported use of new instructional practices via the instructional practices survey.  
- Professional development feedback and evaluations.  
- District analysis of training, learning walk and student outcome data connections.  
- Number of schools administering benchmark assessments. Number of professional development sessions provided on benchmark assessments. Number of schools showing growth from benchmark 1 to benchmark 4.  
- Measure increase in MY Access student users  
- Measure increase of student writing performance (both analytic—trait by trait, and holistic – using a 4-4 score)  
- Usage reports generated from the MPS special services information management system |

(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)

<table>
<thead>
<tr>
<th># ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
</table>
| 1.2-01       | Complete by Fall 2009 | Instructional Leadership and Support  
Teaching and Learning  
Special Services  
Division of Technology Research and Assessment | Operations Fund (staff time)  
ESEA Titles I, II-A, II-D, V IDEA |

Implement a process to organize, analyze and publish key technology application usage data to identify professional development needs and support schools in the application and alignment with learning objectives for applications and tools including but not limited to:

Instructional Collaboration Tools: Virtual Library Services, Library Media Center patronage, Library Media Center Circulation, Curriculum Design Assistant, Virtual School Enrollment, Assistive Technologies, United Streaming, Video Conferencing, eSIS (student information system) IFAS (financial management system), Moodle (learning management system) and others.

Instructional Management Tools: eSIS (electronic) Grade Book, MPA Reports, Data Warehouse, district email, MPS Portal, Student Proficiency System (SPS), and Special Services Information Management System.
<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2-02</td>
<td>Establish and implement the district’s professional development plan and build the capacity for training and collaboration in the use of assessment, instruction and instructional management tools. Professional development will be delivered using a variety of instructional strategies and tools to integrate library media and technology into the content areas.</td>
<td>Completed Annually</td>
<td>Instructional Leadership and Support Teaching and Learning Special Services Research and Assessment Division of Technology School Learning Teams Learning Technologies</td>
<td>Operations Fund (Staff time) ESEA Titles I, II-A, II-D, III, IV, V, and IDEA</td>
</tr>
<tr>
<td>1.2-03</td>
<td>Model and facilitate the use of technology to support differentiated instruction.</td>
<td>Ongoing 2007-2011</td>
<td>Instructional Leadership and Support Teaching and Learning Technologies Special Services School Learning Teams Classroom Teachers</td>
<td>Operations Fund (Staff time) IDEA</td>
</tr>
<tr>
<td>1.2-04</td>
<td>Implement quarterly benchmark assessments in reading and mathematics for students in grades 3-9 throughout the district. Provide professional development for school staff on accessing reports and using data to inform instruction for all students, including English language learners and students with disabilities.</td>
<td>Ongoing 2007-2011</td>
<td>Research and Assessment Instructional Leadership and Support Teaching and Learning Bilingual/Multicultural Education Principals School Learning Teams Classroom Teachers</td>
<td>Operations Fund (Staff time) ESEA Title I-A</td>
</tr>
<tr>
<td>1.2-05</td>
<td>Use MY Access to support student learning by providing immediate feedback to students’ writing samples. This online tool will be implemented during the 2007-08 school year, with gradual increase of users to reach approximately 35,000 students in grades 4-8 across the district. MY Access provides a suite of integrated online tools for managing process writing (pre-writing, drafting, revising, and editing).</td>
<td>Implementing 2007-2008 Gradual Increase 2008-2009 Full Implementation 2009-2010</td>
<td>Instructional Leadership and Support Teaching and Learning Division of Technology Research and Assessment Learning Technologies</td>
<td>Operations Fund Title II-A</td>
</tr>
<tr>
<td>1.2-06</td>
<td>Facilitate the collaboration between library media staff and classroom teachers in the alignment of standards and expectations for high performing library media centers and high performing classrooms. Assure the collaboration among library media staff, instructional technology leaders, and classroom teachers in the alignment of standards and expectations for high performing library media centers and high performing urban classrooms.</td>
<td>Ongoing 2007-2011</td>
<td>Instructional Leadership and Support Teaching and Learning District and school-based Library Media Staff Special Services Principals School Learning Teams Learning Technologies</td>
<td>Operations Fund (Staff time) ESEA Titles I, II-A</td>
</tr>
<tr>
<td>#</td>
<td>ACTIVITIES</td>
<td>TIMELINE</td>
<td>RESPONSIBILITY AREA</td>
<td>BUDGET – RESOURCES NEEDED</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
<td>--------------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>1.2-07</td>
<td>Maintain at a minimum a .2 or higher certified library media specialist in school sites serving students in grades 7-12 and two district-level library media specialists.</td>
<td>Ongoing 2007-2011</td>
<td>Principals Instructional Leadership and Support Teaching and Learning</td>
<td>Operations Fund ESEA Title I</td>
</tr>
<tr>
<td>1.2-08</td>
<td>Provide professional development to members of the Individual Education Plan (IEP) Teams to evaluate the need for and delivery of Assistive Technologies to meet the instructional needs of students.</td>
<td>Ongoing 2007-2011</td>
<td>Special Services Principals School Learning Teams Classroom Teachers</td>
<td>IDEA funding Operations Fund (Staff time)</td>
</tr>
<tr>
<td>1.2-09</td>
<td>Increase the number of MPS teachers who use an online learning management system to enhance daily instruction and deliver courses.</td>
<td>Ongoing 2007-2011</td>
<td>Learning Technologies Instructional Leadership and Support Special Services Division of Technology</td>
<td>Operations Fund (Staff time) ESEA Titles I-A, II-A, II-D, IDEA</td>
</tr>
<tr>
<td>1.2-10</td>
<td>Use learning management system to develop and maintain electronic student portfolios.</td>
<td>Develop System by Fall 2009 Ongoing 2009-2011</td>
<td>Learning Technologies Instructional Leadership and Support Special Services Division of Technology</td>
<td>Operations Fund (Staff time) IDEA, Title III</td>
</tr>
<tr>
<td>1.2-11</td>
<td>Record assessment data and manage Individual Education Plans using the online special services information management system. Provide training and support for teachers and IEP teams to effectively use the system.</td>
<td>Ongoing 2007-2011</td>
<td>Special Services Instructional Leadership and Support School Learning Teams Classroom Teachers</td>
<td>Operations Fund (Staff time) IDEA</td>
</tr>
<tr>
<td>1.2-12</td>
<td>Develop requirements and implement teacher dashboard with updated data warehouse reports.</td>
<td>Complete by Fall 2009</td>
<td>Research and Assessment Division of Technology</td>
<td>Operations Fund (Staff time) Title I</td>
</tr>
<tr>
<td>1.2-13</td>
<td>Develop protocol for appropriate Educators use of student data derived from district information systems.</td>
<td>Complete by Fall 2008</td>
<td>Research and Assessment</td>
<td>Operations Fund (Staff time)</td>
</tr>
</tbody>
</table>
**OBJECTIVE 1.3:** Build the capacity of the district to use online communities and other technologies to support teachers, administrators, and pupil services employees to achieve certification and licensure under PI-34.

(WTS 2,5,7,9,10)

**EVALUATION METHOD:**
- Measure usage of teachers, administrators, and pupil services employees of district enterprise systems.
- Track and evaluate the support and training provided to new teachers, using the newly developed technology reporting system.
- Results of formative and summative evaluations of professional development provided to staff.

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3-01</td>
<td>Train key departments to create, manage and organize the content to be included in the Portal that support staff development.</td>
<td>Ongoing 2007-2011</td>
<td>Learning Technologies All divisions/departments</td>
<td>Operations Fund (staff time) ESEA Titles I-A, II-A, II-D</td>
</tr>
<tr>
<td>1.3-02</td>
<td>Deliver training and provide support to new teachers through the use of district enterprise systems and collaborative sessions.</td>
<td>Ongoing 2007-2011</td>
<td>Learning Technologies Instructional Leadership and Support</td>
<td>Operations Fund (staff time) ESEA Titles I-A, II-A, II-D</td>
</tr>
<tr>
<td>1.3-03</td>
<td>Facilitate online discussions as a part of ongoing professional development for staff and professional learning communities.</td>
<td>Ongoing 2007-2011</td>
<td>Learning Technologies Instructional Leadership and Support Teaching and Learning All Areas delivering professional development School Learning Teams</td>
<td>Operations Fund (staff time) ESEA Titles I-A, II-A, II-D</td>
</tr>
<tr>
<td>1.3-04</td>
<td>Continue to train and support highly skilled online and school-based facilitators to moderate and facilitate online and school based cadres.</td>
<td>Ongoing 2007-2011</td>
<td>Learning Technologies Instructional Leadership and Support School Learning Teams</td>
<td>Operations Fund ESEA Title II-D</td>
</tr>
<tr>
<td>1.3-05</td>
<td>Conduct formative and summative evaluations of the professional development provided to teachers to determine best practices for technology’s relationship to teacher retention.</td>
<td>Annually</td>
<td>Research and Assessment</td>
<td>Private grant funds ESEA Titles I-A, II-A, Title II-D</td>
</tr>
<tr>
<td>NEED STATEMENT(S):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastery Of State Academic Standards And Technology Literacy – MPS students need to meet challenging state academic standards and technology literacy requirements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher Technology Literacy To Advance Student Achievement – MPS needs to increase the proficiency of teachers to use a variety of instructional strategies and technological resources to create learning opportunities that are cross curricular and adaptive to learners with diverse styles and from a range of backgrounds.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication, Collaboration, And Modification – MPS needs to increase the use of technology as communication and collaboration tools to foster language development and problem solving and to support successful interaction of all populations in the classroom.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructional Strategies – MPS teachers need to use multiple methods of delivery to support student mastery of academic standards and technology proficiency for all learners.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Student Capacity – MPS needs to increase the capacity of students to select and use appropriate technology and resources to support learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using Data To Inform Instruction – Educators in Milwaukee will need to learn to effectively use the student data available on the new data warehouse and benchmark assessment systems to make decisions about strategies in the classroom that will not leave any child behind.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| GOAL 2: Student Proficiency | Students will continually develop their academic proficiency and master 21st century technological skills preparing them to live, work, and communicate in a global society; |
### OBJECTIVE 2.1:
Increase to 100% the eighth grade students who are technologically literate by June of each school year and continue this progress in grades 9-12.

| EVALUATION METHOD: | - Technology skill sets are aligned with the MPS Learning Targets.  
- Aligned skill sets are published for students, teachers, and parents.  
- Revised eighth grade technology literacy standards are published and disseminated.  
- Student Performance System data for technology literacy of grade 8 students.  
- Educator approved Internet sites published and disseminated.  
- Recommendations for software published.  
- Number of expanded information technology and technology programs offered in MPS schools. |

(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1-01</td>
<td>Align the technology skill sets by grade level with the MPS Learning Targets in the content areas and disseminate to students, teachers and parents, including student demonstration examples of research-proven technology integration in classroom practice.</td>
<td>Begin September 2007 Ongoing 2007-2011</td>
<td>Instructional Leadership and Support Teaching and Learning Classroom Teachers Instructional Technology Leaders in schools Library media staff</td>
<td>Operations Fund (staff time) ESEA Titles I, II-A</td>
</tr>
<tr>
<td>2.1-02</td>
<td>Update the criteria by which the district will determine the percent of eighth grade students who are technology literate based on the newly revised National Education Technology Standards for Students.</td>
<td>Complete by January 2008</td>
<td>Learning Technologies</td>
<td>Operations Fund (staff time) ESEA Title I</td>
</tr>
<tr>
<td>2.1-03</td>
<td>Identify and make available grade-level appropriate educator approved Internet sites and technology tools that can be integrated into classroom instruction to meet student academic needs.</td>
<td>Initial Set Of Resources by January 2008 Ongoing 2007-2011</td>
<td>Instructional Leadership and Support Teaching and Learning Technologies; Special Services Bilingual/Multicultural Education</td>
<td>Operations Fund (staff time)</td>
</tr>
<tr>
<td>2.1-04</td>
<td>Expand the information technology and technical education programs offered in grades 6-12.</td>
<td>Fall 2007 Ongoing 2007-2011</td>
<td>Career and Technical Education</td>
<td>Operations Fund (staff time) Carl Perkins Funds Title II-D Private Resources</td>
</tr>
<tr>
<td>#</td>
<td>ACTIVITIES</td>
<td>TIMELINE</td>
<td>RESPONSIBILITY AREA</td>
<td>BUDGET – RESOURCES NEEDED</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>2.1-05</td>
<td>Work with community partners to expand technology resources and experiences for students, staff, and families.</td>
<td>Ongoing 2007-2011</td>
<td>Career and Technical Education</td>
<td>Operations Fund (staff time) Carl Perkins Funds Private Resources</td>
</tr>
</tbody>
</table>
**OBJECTIVE 2.2:** Increase by 10% annually the number of students using online and other technologies towards improving achievement, closing achievement gaps, and increasing the graduation rate by June of 2011.

<table>
<thead>
<tr>
<th>EVALUATION METHOD:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Track and report the number of students enrolled in online courses, SLC, and other web-based services through enrollment reports, log-in data, student climate survey, learning walk data, and instructional practices survey.</td>
</tr>
<tr>
<td>- Guidelines for use of assistive technology tools for assessment are developed and disseminated.</td>
</tr>
<tr>
<td>- Continuous monitoring of student achievement for students directly involved in technology programs.</td>
</tr>
</tbody>
</table>

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2-01</td>
<td>Expand the number of students who use an online learning management system to enhance their learning and communication.</td>
<td>Ongoing 2007-2011</td>
<td>Learning Technologies Special Education Classroom teachers</td>
<td>Operations Fund ESEA Title I, II-D IDEA</td>
</tr>
<tr>
<td>2.2-02</td>
<td>Provide opportunities for all students to use web-based and other technology tools to increase individual academic and technology skills.</td>
<td>Ongoing 2007-2011</td>
<td>School Learning Teams Classroom Teachers Instructional Leadership and Support Teaching and Learning Special Services Bilingual/Multicultural Library media staff Learning Technologies</td>
<td>Operations Fund ESEA Title II-D</td>
</tr>
<tr>
<td>2.2-03</td>
<td>Study and recommend use of electronic texts, supplemental materials, and access to international online library systems for all students, including English language learners and students with special needs.</td>
<td>Ongoing 2007-2011</td>
<td>Instructional Leadership and Support Teaching and Learning Special Services Bilingual/Multicultural Library media staff Learning Technologies School Learning Teams Classroom Teachers</td>
<td>Operations Fund IDEA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS PLAN CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>WI Info Tech Plan</td>
</tr>
<tr>
<td>X</td>
</tr>
<tr>
<td>ACTIVITIES</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2.3-01 Ensure that students think critically about the validity and ethical use of online resources and use effective information literacy strategies.</td>
</tr>
<tr>
<td>2.3-02 Ensure that students have access and opportunities to apply a wide variety of technology tools to learning. (i.e., graphing calculators, science probes, Global Positioning Systems (GPS), simulation software, assistive technology tools, etc.)</td>
</tr>
<tr>
<td>2.3-03 Expand the learning options available to students through online courses/virtual schools to prepare them for post-secondary learning and workplace training.</td>
</tr>
<tr>
<td>#</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>2.3-04</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2.3-05</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>2.3-06</td>
</tr>
<tr>
<td>ACTIVITIES</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2.4-01 Provide training to support use of the eSIS Parent Assistant and the MPA Parent Report by parents for information and decision-making.</td>
</tr>
<tr>
<td>2.4-02 Increase the amount of parent-useful content provided in the Parent Community of the MPS Portal, including resources to help parents and families assist their children to improve achievement.</td>
</tr>
<tr>
<td>2.4-03 Collaborate with the Milwaukee Partnership Academy (MPA) to support tutoring and family literacy to increase relationships with local businesses, Milwaukee Public Library, and others; and to maintain a searchable database or directory of tutoring services available within the community</td>
</tr>
<tr>
<td>2.4-04 Encourage and communicate opportunities for families to participate in family learning events and training opportunities beyond the school day.</td>
</tr>
<tr>
<td>2.4-05 Promote the development of information and technology skills through showcases, demonstrations, and other events for parents.</td>
</tr>
<tr>
<td>2.4-06 Provide education on Internet safety to staff, students, and parents.</td>
</tr>
<tr>
<td>NEED STATEMENT(S):</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td><strong>Equitable Access</strong>—MPS needs to continue to strive for equitable access to technology resources for all students and staff to reach a ratio of students to computers equal to 3:1.</td>
</tr>
<tr>
<td><strong>Technology Staff Capacity</strong>—MPS needs to provide and promote training to technology staff, in an effort to build a self-sustainable technology organization</td>
</tr>
<tr>
<td><strong>Wireless Communications</strong>—MPS needs to reduce large capital expenditures for electrical and wiring infrastructure by pursuing wireless technology to cost effectively extend its network.</td>
</tr>
<tr>
<td><strong>Security</strong>—MPS needs to provide secure networking and operating environments to ensure that sensitive data and critical information resources are protected.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GOAL 3:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access to Information Resources and Learning Tools</strong> Students, staff, parents, and community will have equitable access to information resources and technology learning tools to construct knowledge as self-directed, continuous learners.</td>
<td></td>
</tr>
</tbody>
</table>
**OBJECTIVE 3.1:**
Increase the number of schools to meet the goal of a ratio of students to computers equal to 3:1 to 90% by 2010.

**EVALUATION METHOD:**
- District minimum standards are held in compliance
- Questions on annual technology school survey to determine compliance with minimum standards and the goal of 3:1 ratio of computers to students
- Number of students utilizing distance learning opportunities (wireless access, interactive web, video streaming)

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.01</td>
<td>Use Microsoft settlement funds to “refresh” desktops and laptops in all schools with up-to-date technology increasing the ratio of computers to students</td>
<td>January 2010</td>
<td>Division of Technology</td>
<td>Microsoft Settlement</td>
</tr>
</tbody>
</table>
| 3.1-02 | Increase equitable network access and availability of the district network for schools, to extend the availability of educational resources, by deploying wireless networks (802.11 & 802.16) in a cost-effective controlled manner. 
  – Continue to build-out Wi-Max infrastructure to provide universal access to students and their families at home
  – Promote the use wireless technology in the classroom to effect standards-based learning experiences
  – Research and deploy cost effective best practices to provide secure wireless access within schools (classrooms, labs, library, cafeteria, etc.) | January 2010 | Division of Technology | Operations Fund 
Microsoft Settlement |
| 3.1-03 | Request change to board policy to transfer older personal computers (PC’s) to students/community | Fall 2007 | Division of Technology | Operations Fund 
(Staff Time) |
| 3.1-04 | Continue to research and expand capacity to implement alternative delivery methods of curriculum and courses to support teaching and learning goals. Including applications such as:
  – Moodle  
  – Elluminate
  – Portal  
  – Geographical Information System
  – Media Site | Ongoing 2007-2011 | Division of Technology 
Instructional Leadership and Support 
Learning Technologies 
Special Services 
School Learning Teams 
Classroom Teachers | Operations Fund |
<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES¹</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
</table>
| 3.1-05 | Expand equitable access to technology for all students with special needs and English Language Learners by:  
– Provide professional development for District licensed adaptive software  
– Distribute adaptive software District wide to accommodate ELL learners and Special Education students | Ongoing 2007-2011 | Division of Technology Instructional Leadership and Support Special Services Principals School Learning Teams Classroom Teachers | Operations Fund |
| 3.1-06 | Provide and improve interactive video capabilities at schools, specifically in classrooms, to complement the tools available to support teaching and learning goals.  
– Evaluate newer video CODECs.  
– Identify schools/classrooms where video CODECs need to be replaced.  
– Implement the newer CODECs. | Ongoing 2007-2011 | Division of Technology | Operations Fund |
| 3.1-07 | Conduct an annual technology survey to determine compliance with minimum standards and the goal of 3:1 ratio of computers to students. | Annually in the Spring | Division of Technology | Operations Fund (Staff Time) |

¹ Refer to Technology Companion document for additional details.
**OBJECTIVE 3.2:** Maintain and improve the availability and reliability of network services to schools, in support of **99%** network uptime for 24/7 operations.

**EVALUATION METHOD:**
- Reduction in network outages, from a quantity and time perspective
- Compliance to Service Level Agreements

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES^1</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2-01</td>
<td>Conduct an analysis of network and performance monitoring requirements, for the identification and prevention of network outages and slowdowns, in order to support <strong>99.5%</strong> network uptime.</td>
<td>Complete by August 2008</td>
<td>Division of Technology</td>
<td>Operations Fund (Staff Time)</td>
</tr>
</tbody>
</table>
| 3.2-02 | Design a network and performance monitoring strategy to address current and future requirements, outlining operational and technology changes required. Strategy considerations:
- Service Level Agreements for the Network between the schools and the district
- Service Level Agreements for critical Application between the users and the district | Complete by December 2008 | Division of Technology       | Operations Fund (Staff Time) |
| 3.2-03 | Evaluate and implement network monitoring tools in support of complying with service level agreements established. The selected tools would facilitate in:
- Measuring network traffic
- Historical trending and analysis of network traffic
- Proactive identification and resolution of network problems
- Network outage management | Complete by December 2008 | Division of Technology       | Operations Fund (Staff Time) |
| 3.2-04 | Develop and implement a strategy for maximizing the utilization of the second data center (Technology Center) to increase availability, reliability and performance of critical resources that support teaching and learning goals. Strategy considerations:
- Load balancing Internet access
- Balancing the number of critical applications physically located between the two data centers to reduce network traffic to an “overloaded” data center | Complete by December 2009 | Division of Technology       | Operations Fund (Staff Time) |
<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
</table>
| 3.2-05 | Investigate and evaluate network design changes to create efficiencies in the flow of network traffic. Strategy considerations:  
- Network segmentation  
- Development of a service network (isolating administration traffic from user traffic)  
- Network traffic load balancers | Complete by August 2010 | Division of Technology     | Operations Fund (Staff Time) Operations Fund |
| 3.2-06 | Monitor network usage between the two data centers (Central Services & Technology Center), and plan for an increased pipeline, if deemed necessary. | Ongoing 2007-2011 | Division of Technology | Operations Fund |

1 Refer to Technology Companion document for additional details.
OBJECTIVE 3.3: Maintain and improve the availability and reliability of core District application resources and voice services – supporting primary school and business functions, in support of 99% user productivity uptime during primary business hours.

EVALUATION METHOD:
- Reduction in application outages, from a quantity and time perspective
- Compliance to Service Level Agreements

(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
</table>
| 3.3-01 | Establish application specific service level agreements (SLA) for core business (i.e., PeopleSoft), educational (i.e., eSIS) and operating resources (i.e., Active Directory, E-Mail), in conjunction with associated business sponsors. Information to include or identify:  
- User productivity uptime requirements (e.g., 8:30 AM – 3:00 PM)  
- Recoverability requirements (e.g., no downtime, 1 hour, next day)  
- Estimated number users during peak usage | June 2008 | Division of Technology | Operations Fund (Staff Time) |
| 3.3-02 | For each of the identified application SLAs, conduct a detailed technical and operational analysis, to determine the ability to comply with the agreed upon SLA requirements.  
If gaps are identified, develop and implement a plan to address immediate and future needs to be in compliance with SLA. Activities may include:  
- Server Refresh  
- Additional Servers  
- Application Load Balancing Devices  
- Clustering Technology | Ongoing 2007-2011 | Division of Technology | Microsoft Settlement  
E-Rate Fund  
Operations Fund (Staff Time) |
<p>| 3.3-03 | Redesign and implement backup strategy to align with established application SLAs. | Ongoing 2007-2011 | Division of Technology | Operations Fund (Staff Time) |
| 3.3-04 | Redesign and implement a disaster recovery plan to align with established application SLAs. | Ongoing 2007-2011 | Division of Technology | Operations Fund (Staff Time) |
| 3.3-05 | Conduct an analysis of application performance monitoring requirements, for the identification and prevention of outages and slowdowns, in order to support 99% user productivity uptime. | Complete by August 2008 | Division of Technology | Operations Fund (Staff Time) |</p>
<table>
<thead>
<tr>
<th></th>
<th>ACTIVITIES¹</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3-06</td>
<td>Investigate, design and implement application performance monitoring tools.</td>
<td>Complete by December 2008</td>
<td>Division of Technology</td>
<td>Microsoft Settlement Operations Fund (Staff Time)</td>
</tr>
<tr>
<td>3.3-07</td>
<td>Replace the legacy voicemail system, as a result of end-of-life equipment and new usage requirements.</td>
<td>Complete by June 2009</td>
<td>Division of Technology</td>
<td>Microsoft Settlement E-Rate Fund Operations Fund (Staff Time)</td>
</tr>
</tbody>
</table>
**OBJECTIVE 3.4:** Create operating efficiencies in the management, administration and maintenance of key aspects of technical operations/functions, in order to provide and sustain a high level of quality service, in support of increasing educational and business demands of technology.

**EVALUATION METHOD:**
- Reduction in data center operating costs
- Reduction in application outages, from a quantity and time perspective
- Biannual employee technology survey.

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
</table>
| 3.4-01 | Identify, define and communicate core technologies the District will support and integrate into the RFP and application selection process. This may include:  
  - Application Development (J2EE, .NET)  
  - Databases (Oracle, MS SQL)  
  - Operating Systems  
  - Hardware (Dell, SUN, HP)  
  - Storage (EMC)  
  - N-Tier Compliance  
  - LDAP Enabled | Complete by August 2008 | Division of Technology | Operations Fund (Staff Time) |
| 3.4-02 | Provide and promote training aligned with core technologies to technology staff (i.e., skills modernization), in an effort to build a self-sustainable technology organization. | Ongoing 2007-2011 | Division of Technology | Operations Fund |
| 3.4-03 | Conduct an operational analysis of current staffing levels to effectively provide a high level of quality service, based on the core technologies and business systems supported by the District, in an effort to identify potential gaps or areas of improvement. Develop and implement a strategy to compensate any identified deficiencies. Strategies may include:  
  - Reposition of roles  
  - Increased and focused training  
  - Increase number of FTEs | Complete by December 2008 | Division of Technology | Operations Fund |
<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4-04</td>
<td>Investigate, design and implement a technology asset management tool to facilitate how physical technology components (hardware, software and related items) are managed and tracked, covering issues: - Location - Ownership - Usage - Configuration - Maintenance - Disposal</td>
<td>Complete by December 2008</td>
<td>Division of Technology</td>
<td>Operations Fund (Staff Time) Operations Fund</td>
</tr>
<tr>
<td>3.4-05</td>
<td>Investigate and implement server consolidation methods, in an effort to reduce the total number of servers supported and to reduce operating and maintenance costs.</td>
<td>Ongoing 2007-2011</td>
<td>Division of Technology</td>
<td>Operations Fund (Staff Time) Operations Fund</td>
</tr>
</tbody>
</table>

1 Refer to Technology Companion document for additional details.
# ADDRESS PLAN CRITERIA

<table>
<thead>
<tr>
<th></th>
<th>WI Info Tech Plan</th>
<th>WI State Statutes</th>
<th>NCLB</th>
<th>E-Rate</th>
<th>TEACH ACT 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

## OBJECTIVE 3.5:
Increase the number of parents and community members with access to teaching, learning, and other MPS information resources.

### EVALUATION METHOD:
- Measure usage of the Parent Community section in Portal
- Measure usage of Parent Assistant
- Track and report number of schools using Parent Link
- Measure number of times MPA Family Reports are accessed by school staff

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5-01</td>
<td>Reactivate functionality of the MPA Parent Report and explore access to MPA Report from Parent Assistant.</td>
<td>Complete Fall 2008</td>
<td>Division of Technology Research and Assessment</td>
<td>Operations Fund (Staff Time) Title I</td>
</tr>
<tr>
<td>3.5-02</td>
<td>Increase the use of Parent Link, an auto-dialer system, which provides a communication channel to parents for the distribution of important data (e.g., student attendance, school activities).</td>
<td>Ongoing 2007-2011</td>
<td>Division of Technology Student Services Title I Office Communications Office</td>
<td>Operations Fund (Staff Time)</td>
</tr>
<tr>
<td>3.5-03</td>
<td>Provide parents access on student information through Parent Assistant, a module of the MPS student management system (eSIS).</td>
<td>Ongoing 2007-2011</td>
<td>Division of Technology Student Services</td>
<td>Operations Fund</td>
</tr>
<tr>
<td>#</td>
<td>ACTIVITIES</td>
<td>TIMELINE</td>
<td>RESPONSIBILITY AREA</td>
<td>BUDGET – RESOURCES NEEDED</td>
</tr>
<tr>
<td>-----</td>
<td>------------</td>
<td>----------</td>
<td>---------------------</td>
<td>---------------------------</td>
</tr>
</tbody>
</table>
| 3.6-01 | Improve current measures deployed by the district to ensure adherence to the Child Internet Protection Act (CIPA) requirements, including:  
- Updating Acceptable Use Policy to meet current technology challenges  
- Replacing the Proxy/Content Filtering System with updated technology | Complete by August 2008 | Division of Technology | Operations Fund (Staff Time)  
E-Rate Fund  
Operations Fund |
| 3.6-02 | Evaluate, design and implement additional internal controls into the MPS networking infrastructure, including:  
- Implementation of additional firewalls  
- Continued compliance with District N-Tier architecture standards for all applications  
- Network segmentation (e.g., VLAN’s for Voice, Video, Data and Wireless) | Ongoing 2007-2011 | Division of Technology | Operations Fund (Staff Time)  
Operations Fund |
| 3.6-03 | Evaluate, implement and integrate the use of encryption technologies for secure access, transmission (data in flight) and storage (data at rest) of sensitive information. Points of integration include:  
- Networking Infrastructure (for secure access and transmission of data)  
- Applications (for secure access and transmission of data)  
- Data Storage (for secure storage of data)  
Strategies to explore:  
- Enable hard drive encryption on all staff laptops  
- Evaluate, design and implement transparent data encryption methodologies of District applications (HR, Financial and Student information systems) | Complete by December 2010 | Division of Technology | Operations Fund (Staff Time)  
Operations Fund |
<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6-04</td>
<td>Complete the build out of the District’s core Directory Services Infrastructure, which supports account provisioning from source systems (eSIS for students, PeopleSoft for staff) and provides a single point of user account administration. Develop and implement a plan for integrating District applications into the Directory Services Infrastructure for authentication.</td>
<td>Ongoing 2007-2011</td>
<td>Division of Technology</td>
<td>Operations Fund (Staff Time) Operations Fund</td>
</tr>
</tbody>
</table>
| 3.6-05 | Evaluate and implement wireless management & monitoring tools to effectively manage and control the growing wireless networks. The selected tools would facilitate in:  
− Identification of rogue access points  
− Configuration management  
− Firmware updates | August 2008 | Division of Technology | Operations Fund (Staff Time) Operations Fund |
| 3.6-06 | Replace the current e-mail archive system, which was custom built, with a more robust solution that meets the District’s operational requirements. | December 2008 | Division of Technology | Operations Fund (Staff Time) E-Rate Fund Operations Fund |
| 3.6-07 | Continue revising and improving methods for effectively controlling and managing viruses, SPAM, spyware and adware based on best practices. | Ongoing 2007-2011 | Division of Technology | Operations Fund |

1 Refer to Technology Companion document for additional details.
<table>
<thead>
<tr>
<th>NEED STATEMENT(S):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integrated Resource Information System (IRIS)</strong>—MPS needs to improve interoperability and integration among core district business applications and implement an integrated student achievement and instructional management system.</td>
</tr>
<tr>
<td><strong>Review Policies, Procedures, and Standards</strong>—MPS needs to review, deploy and communicate policies, procedures and standards to effectively meet the needs of an ever changing and evolving technology landscape, aligned to support the improvement of student learning and staff knowledge, on a continuous basis.</td>
</tr>
<tr>
<td><strong>Library Media Support</strong>—MPS needs to ensure appropriate library media support is available to support schools and data quality from the district level and at the school level.</td>
</tr>
<tr>
<td><strong>Enterprise Library System</strong>—MPS needs to continue conversion to an enterprise library and media center operation system for all of the library media centers in the district and training is needed to support successful implementation of the new library automation system.</td>
</tr>
<tr>
<td><strong>Technology Staff Capacity</strong>—MPS needs to provide and promote training to technology staff, in an effort to build a self-sustainable technology organization.</td>
</tr>
<tr>
<td><strong>Online Learning Communities</strong>—MPS needs to develop a structure of online communities that serve all teachers, administrators and staff by providing access to information, professional development, and opportunities for collaboration.</td>
</tr>
<tr>
<td><strong>Building Capacity</strong>—MPS needs to increase the district’s capacity to sustain activities through teacher leaders highly literate in integrating technology across the curriculum.</td>
</tr>
<tr>
<td><strong>Using data to inform instruction</strong>—School Leaders in Milwaukee will need to learn to effectively use the student data available in eSIS and on the new data warehouse and benchmark assessment systems to make decisions about strategies in the classroom that will not leave any child behind.</td>
</tr>
<tr>
<td><strong>Dissemination of Information</strong>—MPS needs to maximize the capability of the MPS Portal as an effective communication environment, a useful collaboration tool, and a central access point to key applications.</td>
</tr>
</tbody>
</table>

**GOAL 4:** Support Systems and Leadership

Technology systems to support visionary leadership and educator proficiency will be enhanced to improve student achievement and close achievement gaps.
**OBJECTIVE 4.1:** Develop and implement by June of 2011 a comprehensive integrated resource information system (IRIS) to address all key elements of resource use at the district, school, classroom, and student levels.

**EVALUATION METHOD:**
- Measure usage of MPS Data Warehouse (increasing trend)
- Measure usage of MPS Portal (increasing trend)
- Number of School Interoperability Framework compliant applications (increasing trend)
- Questions on annual technology school survey to measure effectiveness of decision support tools
- Number of applications available through single sign-in on portal
- Number of users of the Data Warehouse
- Number of new reports developed in the Data Warehouse

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE (Start – Finish)</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1-01</td>
<td>Develop easy-to-use decision support tools (Integrated Resources Information System, or IRIS) to monitor resource utilization and its impact on student achievement outcomes.</td>
<td>Complete by June 2011</td>
<td>Division of Technology Finance and Operations Research and Assessment</td>
<td>Operations Fund Grant Funding</td>
</tr>
</tbody>
</table>
| 4.1-02 | Evaluate, define and deploy interoperability strategies to improve data quality and reliability, while reducing data errors and duplication of data. Include: 
  - Requiring compliance to the School Interoperability Framework (SIF) for all new applications. Incorporate a SIF requirement into request for proposals (RFP) and in purchasing evaluations/decisions.
  - Deploying a Data Dictionary (avoiding current location code inconsistencies), and redesigning the existing Entity system.
  - Considering replacement of Operational Data Store (ODS) integration system. | Complete by December 2008 | Division of Technology All Divisions | Operations Fund (Staff time) |
<p>| 4.1-03 | Improve interoperability and integration among core district business applications for the purpose of a) increasing information sharing opportunities, b) improving data quality, c) supporting performance measurement and efficient use of resources, and d) ensuring a foundation for real-time data-driven decision-making. | Ongoing 2007-2011 | Division of Technology Research and Assessment Office of Finance and Operations | Operations Fund (Staff time) Grant Funding |</p>
<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE (Start – Finish)</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
</table>
| 4.1-04 | Continue to expand the capability of the MPS Data Warehouse to provide an effective decision support tool for both classroom teachers and administrators in schools and central services. Activities include:  
- Develop and further refine reports for teachers and administrators.  
- Develop a teacher dashboard to complement the existing school administrator dashboard.  
- Include new data in the Data Warehouse, (e.g., benchmarks, DIBELS).  
- Monitor data quality.  
- Establish data collection and reporting methods to support district-wide performance measurement.  
- Develop Geographic Information System (GIS) analyses | Ongoing 2007-2011          | Division of Technology Research and Assessment Finance and Operations | Operations Fund (Staff time) Title I-A |
| 4.1-05 | Develop and implement a business process strategy to expand and maximize the capability of the MPS Portal as an effective communication environment, a useful collaboration tool and a central access point to key applications, for educators, administrators and students. Activities include:  
- Integration of applications (e.g., email, IFAS, SPS) into Portal  
- Extend availability/reach (e.g., parents, community)  
- Implement workflow processes to streamline operations  
- Develop innovative communication strategies | Complete by December 2006 | Division of Technology All Divisions | Operations Fund (Staff time) |
<table>
<thead>
<tr>
<th><strong>OBJECTIVE 4.2:</strong></th>
<th>Monitor and enforce policies, procedures and standards to effectively meet the needs of an ever changing and evolving technology landscape and support the improvement of student learning and staff knowledge.</th>
</tr>
</thead>
</table>
| **EVALUATION METHOD:** | - Approved menu of educational and instructional software developed and disseminated.  
- Number of schools including technology integration in their Educational Plan.  
- Review of administrative procedures and monitoring plans.  

(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.) |

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
</table>
| 4.2-01 | Communicate and enforce Policies addressing:  
- Acceptable Use  
- Children’s Internet Protection Act  
- Copyright  
- Assistive Technology  
- Distance and Virtual Learning  
- MPS Portal use/accessibility rights for non-MPS staff  
- Privacy Protection  
- Confidentiality  
- Information Policies  
- Security Levels  
- Donations  
- Technology Standards  
- Security Standards  
- System Classification Model | Ongoing 2007-2011 | Division of Technology  
Student Services  
Parent Services  
Special Services  
Learning Technologies | Operations Fund (Staff time) |
| 4.2-02 | Communicate and enforce written standards, policies and practices for technology use addressing:  
- Supported Applications  
- Instructional Applications  
- Computer Standards  
- Maintenance Standards | Ongoing 2007-2011 | Division of Technology  
Instructional Leadership and Support  
Teaching and Learning  
Student Services  
Parent Services  
Special Services | Operations Fund (Staff time) |
| 4.2-03 | Expand the School Educational Plan development process to require schools to address how they will effectively utilize technology to support them in achieving teaching, learning and achievement goals. | Begin Implementation Fall 2007  
Ongoing 2008-2011 | Instructional Leadership and Support  
Teaching and Learning  
Special Services  
Division of Technology | Operations Fund (Staff time) |
<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2-04</td>
<td>Review and communicate educational and instructional software to ensure alignment to the MPS Learning Targets based on state standards and Universal Design for Learning principles.</td>
<td>Begin Fall 2007</td>
<td>Instructional Leadership and Support Teaching and Learning Technologies Special Services Bilingual/Multicultural Education Early Childhood Division of Technology Classroom Teachers</td>
<td>Operations Fund (Staff time)</td>
</tr>
<tr>
<td>4.2-05</td>
<td>Continue to implement and monitor funding strategies that prioritize and coordinate technology investments in hardware, software, purchased services, infrastructure, retrofitting, curriculum development, maintenance and professional development in support of and aligned with learning goals and administrative needs</td>
<td>Ongoing 2007-2011</td>
<td>All Divisions</td>
<td>Operations Fund (Staff time)</td>
</tr>
</tbody>
</table>
### OBJECTIVE 4.3:
Increase by 10% annually student and educator use of information resources through the implementation of a centralized library automation system for all of the library media centers in the district by Fall 2008.

### EVALUATION METHOD:
- Centralized library automation system is implemented.
- Track and report the percent of schools fully implementing the new system.
- Biannual employee technology survey.

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
</table>
| 4.3-01 | Convert to an enterprise library and media center operating system software by:  
  - Centralizing account administration and management  
  - Establishing remote server management  
  - Creating a plan for migrating current records and information to the new system | System Operational by Fall 2008 | Division of Technology Instructional Leadership and Support Teaching and Learning Library media staff; | School Operations |
| 4.3-02 | Develop and implement a professional development plan to support district staff to effectively use of the new library automation system, which will:  
  - Enable access to school library media center catalogs including the Curriculum Technology Resource Center 24/7 via the web.  
  - Permit greater efficiency in searching various types of resources through a single query.  
  - Streamline the process of upgrades.  
  - Provide for a standard library record format across the district. | Begin Fall 2007  
  Ongoing  
  2007-2011 | Instructional Leadership and Support Teaching and Learning Library media staff; | School Operations |
**OBJECTIVE 4.4:** Increase the capacity of staff to demonstrate leadership in the understanding and application of technology and to use technology to achieve personal and professional goals

**EVALUATION METHOD:**
- District survey results on staff self-evaluation of technology skills
- Usage reports generated from the MPS online registration system.
- Employee reported use of new instructional practices.
- Staff development evaluations.
- District analysis of training, learning walk and student outcome data connections.

*(Please see Section G - Monitoring, Evaluating, and Revising the Plan - for the evaluation and report format.)*

<table>
<thead>
<tr>
<th>#</th>
<th>ACTIVITIES</th>
<th>TIMELINE</th>
<th>RESPONSIBILITY AREA</th>
<th>BUDGET – RESOURCES NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4-01</td>
<td>Develop and administer a biannual survey on staff self-evaluation of technology skills and use of technology to perform work duties based on research-proven and industry standards.</td>
<td>Complete by August 2009</td>
<td>Division of Technology Research and Assessment</td>
<td>Operations Fund (Staff time) ESEA Titles I-A, II-A, II-D</td>
</tr>
<tr>
<td>4.4-02</td>
<td>Identify and publish technology skills required for administrators at all levels.</td>
<td>Complete by June 2008</td>
<td>Instructional Leadership and Support Division of Technology</td>
<td>Operations Fund (Staff time) ESEA Titles II-A, II-D</td>
</tr>
<tr>
<td>4.4-03</td>
<td>Develop face-to-face and online training and support options for district and school-based administrators as well as teacher leaders to enhance technology skills and support visionary leadership to integrate technology in curriculum, instruction, and assessment as well as business operations.</td>
<td>Ongoing 2007-2011</td>
<td>Instructional Leadership and Support Division of Technology Learning Technologies</td>
<td>Operations Fund (Staff time) ESEA Titles I, II-A, II-D</td>
</tr>
<tr>
<td>4.4-04</td>
<td>Integrate into current accountability systems expectations and support systems that assure effective design and measures for classroom learning supported by effective technology use.</td>
<td>Complete by June 2009</td>
<td>Administrative Accountability Human Resources Instructional Leadership and Support Learning Technologies Finance and Operations</td>
<td>Operations Fund (Staff time)</td>
</tr>
<tr>
<td>4.4-05</td>
<td>Provide ongoing professional development and support for district staff to effectively use productivity software, decision support and data collection tools.</td>
<td>Ongoing 2007-2011</td>
<td>All Divisions</td>
<td>Operations Fund (Staff time)</td>
</tr>
<tr>
<td>4.4-06</td>
<td>Provide technology support center services to schools and central services for district-supported applications.</td>
<td>Ongoing 2007-2011</td>
<td>Division of Technology</td>
<td>Operations Fund (Staff time)</td>
</tr>
</tbody>
</table>
F. DISSEMINATION TO STAKEHOLDERS

Communicating the Plan

For the next three years, this Plan will be the roadmap as the district implements the objectives and strategies that it includes. The components of the Plan will become part of district projects that will affect both public and nonpublic schools through the Title IID activities.

The Plan will be available to MPS employees and all community members via the MPS Portal. Information about how to access the Plan will be included in the district's Administrators' Bulletin. A summary of the plan for classroom teachers will be developed and disseminated in collaboration with the MTEA. The Division of Technology will provide implementation progress reports to district leadership on a regular basis.

The Division of Teaching and Learning will include a review of the plan and updates on targeted strategies in the weekly meetings for staff. This ongoing conversation will foster collaborative support and wider communication among this group of instructional leaders, with the potential of impacting the many groups they work with, including principals/school leaders, department chairpersons, math teacher leaders, literacy coaches, community partners, parents, district administrators, and others.

Monthly meetings of the district’s Instructional Technology Leaders will provide ongoing opportunities to share the district’s plan and update stakeholders as the work of the plan moves forward and brings about embedded change in the business and educational processes of the district. Listservs and online collaborative support room utilized by Instructional Technology Leaders will be used as forums for the dissemination of information that will further the work of this plan.

Quarterly meetings of the district’s Enhancing Education Through Technology group will provide ongoing opportunities to share the district’s plan and update stakeholders as the work on the plan moves forward and brings about embedded change in the business and educational process of the district.

Adult Literacy Opportunities

In addition to disseminating the plan to its stakeholders, the district is also responsible for providing or assisting other entities in advancing technology literacy among adult community members. Moreover, parents and community members should have access to learning computer skills and software programs; electronic communication tools (i.e. email, Internet and intranet); multimedia tools; and research and problem-solving tools. An intensive effort will be made over the next three years to coordinate adult technology opportunities with existing literacy collaboratives and district outreach initiatives.

MPS is currently a member of the Milwaukee Family Literacy Coalition. This collaborative of over twenty adult literacy service providers will be used to develop a plan to maximize the opportunities available for parents and families to use technology information resources and learning tools. In particular, parents and guardians need access to Internet-ready computers and school-based on-line services (i.e. student work, student records, student homework assignments; communication with teachers) / administrators; school announcements, schedules, lunch menus, permission slips, etc.)

Similarly, the district has several outreach initiatives to parents and community members that can be utilized to enhance technology literacy:

- The district’s Parent Information Center and Title I Services provide parents with access to a wide range of information, knowledge and skills, which will enable parents to be collaborative partners in the education of their children. Technology literacy information is shared at monthly training / information sessions (i.e. training on accessing the Parent Assistant module for their child’s information, the MPA database for tutoring services in the community, and the MPS Portal for resources to assist their child in improving achievement.)
- The citywide council of PTA / PTSA’s will be tapped to assist in providing technology literacy opportunities for its members and / or informing its members of on-going opportunities.
- The Parent Coordinators, Technology Coordinators and Library Media Specialists in the schools will be engaged in developing strategies to provide technology opportunities for parents and families at the school level (i.e. showcases, demonstrations and family learning events utilizing information and technology tools).
- The 52 Community Learning Centers (CLCs) will also be engaged in discussions to provide access to technology resources for parents and adult community members during “after school hours”.

On a city-wide basis, the Division of Recreation and Community Services will continue to provide adult enrichment classes for the Milwaukee community that are technology related. Currently, over 25 classes are offered each season in a variety of computer and software programs (i.e. Microsoft Office, Excel, Word, Publisher and PowerPoint; email, Internet and Windows XP). The Recreation Division will collaborate on an on-going basis with the district’s Division of Teaching and Learning and Learning Technologies to offer additional technology literacy classes for adult community members.

The Recreation Division is also implementing its registration system to provide “24-7” on-line registration opportunities for community members interested in taking technology-related as well as other enrichment classes.

On a citywide basis, computer classes are also offered at all Milwaukee Public Libraries on a regular basis. The library offers free, two hour, hands-on classes covering basics on using the computer, Internet, word processing and email. Efforts to coordinate the Public Library’s adult technology literacy opportunities with the district’s technology plan, will also be extremely advantageous for parents and adult community members.
G. MONITORING, EVALUATING, AND REVISING THE PLAN

Evaluation Methods:
The Implementation Action Plan identifies the evaluation method for each of the plan's objectives, along with the department or division responsible for monitoring implementation, collecting the data, and reporting results. The Plan includes both formative and summative evaluation, and will seek to provide feedback and guidance during the implementation process and to document the Plan's relative success in meeting identified outcomes. A monitoring and evaluation report format is used to facilitate the ongoing monitoring and evaluation of the Plan to allow for midcourse plan adjustments, as well as reporting progress on an annual basis. The report format is included at the end of this section.

Ongoing Planning and Monitoring:
The Office of Instructional Leadership and Support, Division of Teaching and Learning, and the Department of Technology will be responsible for oversight of the plan's implementation, monitoring, and evaluation. This will be an ongoing process incorporated into existing structures within the district. The following are examples:

- The Office of Instructional Leadership and Support and the Division of Technology provide the superintendent and senior management staff with implementation status reports regarding strategic direction and budgetary plans. Updates will be provided to the Board of School Directors as a part of the annual budget planning process.
- A strong collaborative relationship between the Office of Instructional Leadership and Support (including Teaching and Learning and curriculum specialists in the content areas) and the Division of Technology, including Learning Technologies, provides a strong foundation for system and network improvements. Staff meets both formally and informally to solve problems, synchronize support efforts and coordinate the implementation of projects. Over the last several years, collaboration activities included the development and implementation of the district’s Learning Targets aligned to state standards; ongoing planning for professional development for principals, school learning teams, literacy coaches, and other staff; planning related to the development of classroom assessments based on standards; implementation of PI-34 requirements; and the further development of the MPS Portal.
- Staff from the offices of Office of Instructional Leadership and Support and the Division of Technology serve on the planning team responsible for developing Milwaukee’s ESEA Consolidated Plan. The planning team includes broad representation from district, school, parent, community, and non-public schools. In both 2006 and 2007, the team met at least six times during the spring to finalize Milwaukee’s plan and additional meetings were held during the year to monitor implementation. The planning and implementation of key components of the Information and Technology Strategic Plan is embedded into this process.
- Ongoing planning also occurs through involvement with work of the Milwaukee Partnership Academy (MPA). The Director of Instructional Leadership and Support, Director of Teaching and Learning, Director of Research and Assessment, ESEA Acting Title I Coordinator, K-12 Reading Curriculum Specialist, and Staff Development Supervisor serve on the MPA’s implementation team and workgroups which meet monthly. Collaboration within these groups includes involvement in planning and implementing strategies; problem identification and problem solving; sharing of resources; and development of next steps. The planning and implementation of key components of the Information and Technology Strategic Plan is embedded into the work of the MPA.
- District data system work groups responsible for the implementation of various data management systems, such as the data warehouse, enterprise resource planning, student information system, finance information system, and others, meet on a regular basis to ensure ongoing effective operations, resolve problems, and plan for future system modifications to meet needs.
- The Director of Technology and Director of Teaching and Learning will conduct a meeting of the Information and Technology Strategic Plan school/community team at least once annually to review implementation progress.
**Timeline for Continuous Planning and Monitoring Cycle:**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation status reports to Superintendent and senior management for strategic direction and budgetary plans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Updates to the School Board as part of the annual budget process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ongoing collaborative meetings between Instructional Leadership and Support staff across disciplines and areas of support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation on planning team for the ESEA Consolidated Plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ongoing monitoring and planning with the Milwaukee Partnership Academy Implementation Team</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District data systems planning groups, i.e., Data Warehouse, Enterprise Resource Planning, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide the school/community technology team with progress report on status of implementation annually.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Goal 1: Educator Proficiency – Administrators, teachers, and staff will continually develop information and technology proficiency to enhance their effectiveness and increase student achievement and close achievement gaps.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Current Status</th>
<th>Evaluation Findings</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1.1       | Increase usage of an online registration system by 10% each year to collect and use data on staff development to improve teaching and learning, data-based decision-making, resource allocation, accountability, and delivery of services. (WTS 7,9,10) | - Usage reports generated from the MPS online registration system.  
- Teacher reported use of new instructional practices via the instructional practices survey.  
- Staff development evaluations.  
- District analysis of training, learning walk and student outcome data connections.  
- Employee reported use of technology via a biannual employee technology survey. | ☐ Analysis  
☐ Planning  
☐ Execution | |
<table>
<thead>
<tr>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Current Status</th>
<th>Evaluation Findings</th>
<th>Action</th>
</tr>
</thead>
</table>
| Increase the use of information and technology resources for collaboration, instruction, assessment, and instructional management by teachers, administrators and other district staff by 10% each year. | - Measure and report changes in annual usage of information and technology tools.  
- Usage reports generated from the MPS online registration system (ENROLL)  
- Usage reports generated from the MPS learning management system (Moodle)  
- Teacher reported use of new instructional practices via the instructional practices survey.  
- Professional development feedback and evaluations.  
- District analysis of training, learning walk and student outcome data connections.  
- Number of schools administering benchmark assessments.  
- Number of professional development sessions provided on benchmark assessments.  
- Number of schools showing growth from benchmark 1 to benchmark 4.  
- Measure increase in MY Access student users  
- Measure increase of student writing performance (both analytic—trait by trait, and holistic – using a 4-4 score)  
- Usage reports generated from the MPS special services information management system | Analysis | Planning | Execution | |  |
| Build the capacity of the district to use online communities and other technologies to support teachers, administrators, and pupil services employees to achieve certification and licensure under PI-34. | - Measure usage of teachers, administrators, and pupil services employees of district enterprise systems.  
- Track and evaluate the support and training provided to new teachers, using the newly developed technology reporting system.  
- Results of formative and summative evaluations of professional development provided to staff. | Analysis | Planning | Execution | |  |
Goal 2: Student Proficiency – Students will continually develop their academic proficiency and master 21st century technological skills preparing them to live, work, and communicate in a global society.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Current Status</th>
<th>Evaluation Findings</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2.1       | Increase to 100% the eighth grade students who are technologically literate by June of each school year and continue this progress in grades 9-12. | - Technology skill sets are aligned with the MPS Learning Targets.  
- Aligned skill sets are published for students, teachers, and parents.  
- Revised eighth grade technology literacy standards are published and disseminated.  
- Student Performance System data for technology literacy of grade 8 students.  
- Educator approved Internet sites published and disseminated.  
- Recommendations for software published.  
- Number of expanded information technology and technology programs offered in MPS schools. | Evaluation Findings (Briefly describe results and status of implementation) | Analysis  
Planning  
Execution | Ongoing |
| 2.2       | Increase by 10% annually the number of students using online and other technologies towards improving student achievement, closing achievement gaps, and increasing the graduation rate by June of 2011. | - Track and report the number of students enrolled in online courses, SLC, and other web-based services through enrollment reports, log-in data, student climate survey, learning walk data, and instructional practices survey.  
- Guidelines for use of assistive technology tools for assessment are developed and disseminated.  
- Continuous monitoring of student achievement for students directly involved in technology programs. | Evaluation Findings (Briefly describe results and status of implementation) | Analysis  
Planning  
Execution | Ongoing |
<table>
<thead>
<tr>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Current Status</th>
<th>Evaluation Findings (Briefly describe results and status of implementation)</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2.3       | Students will select the technology that best enables them to acquire information, communicate their knowledge and understanding of content, and solve problems at a higher level of critical thinking. | - Track and report the number of students who use each of the virtual library tools.  
- Track and report information from the online student surveys completed by students, teachers, and parents participating in the one-to-one laptop project.  
- District analysis of training, learning walk and student outcome data connections. | ☐ Analysis  
☐ Planning  
☐ Execution |        |
| 2.4       | Build the capacity of MPS families to use technologies to support student success. | - Measure usage of the Parent Community section in Portal.  
- Measure number of times MPA Family Reports are accessed by school staff.  
- Measure usage of the eSIS Parent Assistant. | ☐ Analysis  
☐ Planning  
☐ Execution |        |
Goal 3: Access to Information Resources and Learning Tools – Students, staff, parents, and community will have equitable access to information resources and technology learning tools to construct knowledge as self-directed, continuous learners.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Current Status</th>
<th>Evaluation Findings (Briefly describe results and status of implementation)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Increase the number of schools that meet the goal of a ratio of students to computers equal to 3:1 to 90% by 2010.</td>
<td>District minimum standards are held in compliance. - Questions on annual technology school survey to determine compliance with minimum standards and the goal of 3:1 ratio of computers to students. - Number of students utilizing distance-learning opportunities (wireless access, interactive web, video streaming).</td>
<td>Analysis Planning Execution</td>
<td>Ongoing</td>
</tr>
<tr>
<td>3.2</td>
<td>Maintain and improve the availability and reliability of network services to schools in support of 99% network uptime for 24/7 operations.</td>
<td>Reduction in network outages, from a quantity and time perspective - Compliance to Service Level Agreements</td>
<td>Analysis Planning Execution</td>
<td>Ongoing</td>
</tr>
<tr>
<td>3.3</td>
<td>Maintain and improve the availability and reliability of core district application resources and voice services – supporting primary school and business functions, in support of 99% user productivity uptime during primary business hours.</td>
<td>Reduction in application outages, from a quantity and time perspective - Compliance to Service Level Agreements</td>
<td>Analysis Planning Execution</td>
<td>Ongoing</td>
</tr>
<tr>
<td>3.4</td>
<td>Create operating efficiencies in the management, administration and maintenance of key aspects of technical operations / functions, in order to provide and sustain a high level of quality service in support of increasing educational and business demands of technology.</td>
<td>Reduction in data center operating costs - Reduction in application outages, from a quantity and time perspective - Biannual employee technology survey.</td>
<td>Analysis Planning Execution</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Objective</td>
<td>Evaluation Method</td>
<td>Current Status</td>
<td>Evaluation Findings (Briefly describe results and status of implementation)</td>
<td>Action</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------</td>
<td>----------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| 3.5       | Increase the number of parents and community members with access to teaching, learning, and other MPS information resources. | - Measure usage of the Parent Community section in Portal  
- Measure usage of Parent Assistant  
- Track and report number of schools using Parent Link  
- Measure number of times MPA Family Reports are accessed by school staff | ☐ Analysis  
☐ Planning  
☐ Execution | Dropped  
Revised  
Ongoing  
Complete |
| 3.6       | Provide a secure networking and operating environment, ensuring that sensitive data and critical information resources are protected to maintain the privacy and confidentiality of student and staff records on an ongoing basis. | - Compliance to a Security Audit  
- Timely removal of terminated accounts in all systems  
- Reduction in District’s risk profile | ☐ Analysis  
☐ Planning  
☐ Execution | Dropped  
Revised  
Ongoing  
Complete |
Goal 4: Support Systems and Leadership – Technology systems will support visionary leadership and educator proficiency to improve student achievement and close achievement gaps.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Current Status</th>
<th>Evaluation Findings (Briefly describe results and status of implementation)</th>
<th>Action</th>
</tr>
</thead>
</table>
| 4.1       | Develop and implement by June of 2011 a comprehensive integrated resource information system (IRIS) to address all key elements of resource use at the district, school, classroom, and student levels. | - Measure usage of MPS Data Warehouse (increasing trend)  
- Measure usage of MPS Portal (increasing trend)  
- Number of School Interoperability Framework compliant applications (increasing trend)  
- Questions on annual technology school survey to measure effectiveness of decision support tools  
- Number of applications available through single sign-in on portal  
- Number of users of the Data Warehouse  
- Number of new reports developed in the Data Warehouse | | |
<table>
<thead>
<tr>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Current Status</th>
<th>Evaluation Findings (Briefly describe results and status of implementation)</th>
<th>Action</th>
</tr>
</thead>
</table>
| 4.4       | Increase the capacity of staff to demonstrate leadership in the understanding and application of technology and to use technology to achieve personal and professional goals. | - District survey results on staff self evaluation of technology skills  
- Usage reports generated from the MPS online registration system.  
- Employee reported use of new instructional practices.  
- Staff development evaluations.  
- District analysis of training, learning walk and student outcome data connections. | □ Analysis  
□ Planning  
□ Execution |        |
H. BUDGET

The Division of Technology has the responsibility to develop, implement and maintain enterprise applications for the Milwaukee Public Schools. This includes the district’s Enterprise Wide Area Network (EWAN), which supports all voice, video and data communications traffic. In addition, the division maintains the district’s two core data centers which house servers and telecommunications equipment that support all mission critical applications. The division staff of 84 employees is augmented with several full-time technical contractors and consultants.

The district’s local budget for the Division of Technology is approximately twelve million dollars annually. These funds are used to maintain all of the district’s mission critical applications such as student information management, financials, human resources, data warehouse, student transportation and others. The district must use local funds to pay its portion of services and products approved under the E-Rate program.

Each year, the district's local funds are supplemented by an additional seven to eight million dollars in E-Rate funds. These E-Rate funds are used to defray eighty-four percent of the recurring service fees for Internet access and telephone services. E-Rate has also funded purchases of servers, network switches, and routers.

Most of the district’s professional development initiatives and procurement of instructional software are paid for with funds received in various grants. Districtwide professional development that specifically addresses integration of technology is funded with Title IID grant dollars. Local school funds are used to procure hardware such as desktops, laptops, data projectors, and handheld devices, as well as finance embedded local professional development.

The budget worksheet that follows provides a summary of funding sources used to support professional development, learning tools, educational software, computing hardware, information resources, infrastructure, and connectivity. All funding levels are projections for the next three years.

Funding for these initiatives will be an essential component in the district's plan to make information literacy and technology integral elements of a 21st century education.
## MPS Instructional Media & Technology Budget Work Sheet

<table>
<thead>
<tr>
<th>Funding Area &amp; Year</th>
<th>Professional Development</th>
<th>Learning Tools (Hardware, AV Equipment, etc...)</th>
<th>Information Resources (Print, Electronic and Online Subscriptions/Resources, Software, Multimedia)</th>
<th>Infrastructure and Connectivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funding Source</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local District Budget</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$3,000,000</td>
<td>$200,000</td>
<td>$200,000</td>
<td></td>
</tr>
<tr>
<td>E-Rate</td>
<td></td>
<td></td>
<td>$1,178,460</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$1,178,460</td>
<td>$1,810,140</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$4,713,840</td>
<td>$4,713,840</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$7,240,560</td>
<td></td>
</tr>
<tr>
<td>NCLB Programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title I</td>
<td>$9,400,000</td>
<td>$9,400,000</td>
<td>$9,400,000</td>
<td></td>
</tr>
<tr>
<td>Title II, Part A: Ed Train</td>
<td>$2,300,000</td>
<td>$2,300,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title II, Part B: Math/Sci</td>
<td>$1,100,000</td>
<td>$833,000</td>
<td>$840,000</td>
<td></td>
</tr>
<tr>
<td>Title II, Part D: Ed Tech</td>
<td>$108,000</td>
<td>$191,000</td>
<td>$190,000</td>
<td></td>
</tr>
<tr>
<td>Title IV</td>
<td>$33,000</td>
<td>$29,000</td>
<td>$30,000</td>
<td></td>
</tr>
<tr>
<td>Title V</td>
<td></td>
<td></td>
<td>$700,000</td>
<td></td>
</tr>
<tr>
<td>Title VI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State of WI Programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common School Fund</td>
<td></td>
<td></td>
<td>$4,400,000</td>
<td></td>
</tr>
<tr>
<td>Telecom Access Subsidy</td>
<td></td>
<td></td>
<td>$4,400,000</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsoft Settlement</td>
<td>$25,000,000</td>
<td>$3,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$10,641,000</strong></td>
<td><strong>$12,753,000</strong></td>
<td><strong>$12,760,000</strong></td>
<td><strong>$5,892,300</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All funding levels are projections ($102,289,300)
### Budget Summary For FY 2008-09 & District Support of E-Rate Services

<table>
<thead>
<tr>
<th>Technology Category</th>
<th>Estimated E-Rate Application Request Total(^1)</th>
<th>Estimated E-Rate Discounted Funds Received(^1)</th>
<th>Estimated E-Rate Local Funds Allocation(^1,2)</th>
<th>Additional Local Funds Allocated To Support Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Personal computers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- TDD System</td>
<td>60,000</td>
<td>48,000</td>
<td>12,000</td>
<td>$3,000,000</td>
</tr>
<tr>
<td>- Educational Software</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Leased Digital Transmission Service</td>
<td>$2,412,000</td>
<td>$1,929,600</td>
<td>$482,400</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>- Cisco SMARTnet Maintenance Service</td>
<td>120,000</td>
<td>96,000</td>
<td>24,000</td>
<td></td>
</tr>
<tr>
<td>- ISDN Primes &amp; DS-1 Service</td>
<td>1,374,000</td>
<td>1,099,200</td>
<td>274,800</td>
<td></td>
</tr>
<tr>
<td>- Internet Service Provider</td>
<td>181,000</td>
<td>144,800</td>
<td>36,200</td>
<td></td>
</tr>
<tr>
<td>- Local Telephone Service (POTS)</td>
<td>1,591,500</td>
<td>1,273,200</td>
<td>318,300</td>
<td></td>
</tr>
<tr>
<td>- PBX Maintenance</td>
<td>141,600</td>
<td>113,280</td>
<td>28,320</td>
<td></td>
</tr>
<tr>
<td>- Long Distance Service</td>
<td>12,200</td>
<td>9,760</td>
<td>2,440</td>
<td></td>
</tr>
<tr>
<td>Professional Development</td>
<td></td>
<td></td>
<td></td>
<td>$3,500,000(^3)</td>
</tr>
<tr>
<td>Staffing</td>
<td></td>
<td></td>
<td></td>
<td>$5,000,000</td>
</tr>
</tbody>
</table>

\(^1\) [Estimated E-Rate Application Request Total] = [Estimated E-Rate Discounted Funds Received] + [Estimated E-Rate Local Funds Allocation]

\(^2\) Local funds that have to be included as part of the District budget and Board approved.

\(^3\) Professional Development funds include Title II–D and E2-T2 competitive grants, estimated to be $1,300,000.
# Budget Summary For FY 2009-10 & District Support of E-Rate Services

<table>
<thead>
<tr>
<th>Technology Category</th>
<th>Estimated E-Rate Application Request Total</th>
<th>Estimated E-Rate Discounted Funds Received</th>
<th>Estimated E-Rate Local Funds Allocation</th>
<th>Additional Local Funds Allocated To Support Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardware</strong></td>
<td></td>
<td></td>
<td></td>
<td>$25,000,000</td>
</tr>
<tr>
<td>- Personal computers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- TDD System</td>
<td>60,000</td>
<td>48,000</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td>- Educational Software</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operations &amp; Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
<td>$2,000,000</td>
</tr>
<tr>
<td>- Leased Digital Transmission Service</td>
<td>$2,412,000</td>
<td>$1,929,600</td>
<td>$482,400</td>
<td></td>
</tr>
<tr>
<td>- Cisco SMARTnet Maintenance Service</td>
<td>120,000</td>
<td>96,000</td>
<td>24,000</td>
<td></td>
</tr>
<tr>
<td>- ISDN Primes &amp; DS-1 Service</td>
<td>1,374,000</td>
<td>1,099,200</td>
<td>274,800</td>
<td></td>
</tr>
<tr>
<td>- Internet Service Provider</td>
<td>181,000</td>
<td>144,800</td>
<td>36,200</td>
<td></td>
</tr>
<tr>
<td>- Local Telephone Service (POTS)</td>
<td>1,591,500</td>
<td>1,273,200</td>
<td>318,300</td>
<td></td>
</tr>
<tr>
<td>- PBX Maintenance</td>
<td>141,600</td>
<td>113,280</td>
<td>28,320</td>
<td></td>
</tr>
<tr>
<td>- Long Distance Service</td>
<td>12,200</td>
<td>9,760</td>
<td>2,440</td>
<td></td>
</tr>
<tr>
<td><strong>Professional Development</strong></td>
<td></td>
<td></td>
<td></td>
<td>$3,500,000</td>
</tr>
<tr>
<td><strong>Staffing</strong></td>
<td></td>
<td></td>
<td></td>
<td>$5,000,000</td>
</tr>
</tbody>
</table>

$5,892,300  $4,713,840  $1,178,460

1 [Estimated E-Rate Application Request Total] = [Estimated E-Rate Discounted Funds Received] + [Estimated E-Rate Local Funds Allocation]
2 Local funds that have to be included as part of the District budget and Board approved.
3 Professional Development funds include Title II–D and E2-T2 competitive grants, estimated to be $1,000,000.
## Budget Summary For FY 2010-11 & District Support of E-Rate Services

<table>
<thead>
<tr>
<th>Technology Category</th>
<th>Estimated E-Rate Application Request Total(^1)</th>
<th>Estimated E-Rate Discounted Funds Received(^1)</th>
<th>Estimated E-Rate Local Funds Allocation(^{1,2})</th>
<th>Additional Local Funds Allocated To Support Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardware</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- PBX Equipment</td>
<td>$2,000,000</td>
<td>$1,600,000</td>
<td>$400,000</td>
<td></td>
</tr>
<tr>
<td>- Storage (E-Mail)</td>
<td>400,000</td>
<td>320,000</td>
<td>80,000</td>
<td></td>
</tr>
<tr>
<td>- Personal computers</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- PBX (Licenses)</td>
<td>$500,000</td>
<td>$400,000</td>
<td>100,000</td>
<td></td>
</tr>
<tr>
<td>- E-Mail System Software (Licenses)</td>
<td>400,000</td>
<td>320,000</td>
<td>80,000</td>
<td></td>
</tr>
<tr>
<td>- TDD System</td>
<td>60,000</td>
<td>48,000</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td>- Educational Software</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Operations &amp; Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Leased Digital Transmission Service</td>
<td>$2,412,000</td>
<td>$1,929,600</td>
<td>$482,400</td>
<td></td>
</tr>
<tr>
<td>- Cisco SMARTnet Maintenance Service</td>
<td>120,000</td>
<td>96,000</td>
<td>24,000</td>
<td></td>
</tr>
<tr>
<td>- ISDN Primes &amp; DS-1 Service</td>
<td>1,374,000</td>
<td>1,099,200</td>
<td>274,800</td>
<td></td>
</tr>
<tr>
<td>- Internet Service Provider</td>
<td>181,000</td>
<td>144,800</td>
<td>36,200</td>
<td></td>
</tr>
<tr>
<td>- Local Telephone Service (POTS)</td>
<td>1,591,500</td>
<td>1,273,200</td>
<td>318,300</td>
<td></td>
</tr>
<tr>
<td>- Long Distance Service</td>
<td>12,200</td>
<td>9,760</td>
<td>2,440</td>
<td></td>
</tr>
<tr>
<td><strong>Professional Development</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$3,500,000(^3)</td>
</tr>
<tr>
<td><strong>Staffing</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$5,000,000</td>
</tr>
</tbody>
</table>

\[\text{Estimated E-Rate Application Request Total} = \text{Estimated E-Rate Discounted Funds Received} + \text{Estimated E-Rate Local Funds Allocation}\]

\(^{1}\) Local funds that have to be included as part of the District budget and Board approved.

\(^{2}\) Professional Development funds include Title II-D and E2-T2 competitive grants, estimated to be $1,000,000.
I. APPENDICIES

1. Selected District Demographics and Achievement Trends
2. Research Bibliography
3. Wisconsin Teacher Standards
4. Information and Technology Program Policies
APPENDIX 1 – Selected District Demographic and Achievement Trends

Racial Diversity:
The Milwaukee Public Schools remains an ethnically diverse school district. While African Americans remain the largest group of students, the percentage of Hispanics is increasing while the percentage of white students continues to decline.

Enrollment totals include students enrolled in traditional as well as charter, alternative and other schools. Students enrolled in Chapter 220 and Open Enrollment programs are excluded from analysis.

Enrollment by Grade:
Compared to ten years ago, there is a smaller wave of students moving through the grades, resulting from a decline in new births in the early to mid-90’s and an increase in the voucher and open enrollment program enrollment. The lower tide of students will impact the high school grades in 2-3 years.

Source: MPS official 3rd Friday in September enrollment report
Because students fail to earn sufficient credits to move to sophomore status, the largest enrollment is at grade 9. The sharp drop in enrollment beyond grade 9 is due largely to student dropouts.

**K-8 School and Smaller High Schools:**
Several years ago, the district began to convert elementary schools to K-8 schools. In 1998-99, 23 large middle schools accounted for nearly 90% of all middle grade (6-8) enrollment, while K-8 schools accounted for 10%. In 2006-07, 59 K-8 schools accounted for 43% of all middle grade enrollment, while middle schools comprised 47%.

Five years ago, the district began to develop more small high schools with smaller learning environments. Eight years ago, 15 large high schools accounted for over 90% of all high school grade enrollment (9-12), while small high schools accounted for just 2% of the total. In 2006-07, 29 small high schools accounted for 23% of all high school enrollment. Two large high schools adopted the Small Learning Communities model (SLC) in 2006-07, accounting for 13% of 9-12 enrollment.

**Middle Grades**

<table>
<thead>
<tr>
<th>Year</th>
<th>K-8 Schools</th>
<th>Middle 23 Schools</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998-99</td>
<td>12 Schools (9%)</td>
<td>(88%)</td>
<td>(3%)</td>
</tr>
<tr>
<td>2006-07</td>
<td>59 Schools (43%)</td>
<td>(47%)</td>
<td>(19%)</td>
</tr>
</tbody>
</table>

**High School Grades**

<table>
<thead>
<tr>
<th>Year</th>
<th>Small HS 7 schools (2%)</th>
<th>Large HS 15 schools (91%)</th>
<th>Partner HS 26 schools (9%)</th>
<th>Other 2 schools (13%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998-99</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006-07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Data Source: 3rd Friday Sept. 2007-07 enrollment file and district entity file of school types.
Students Receiving Free/Reduced Lunch:

An increasing percentage of MPS students receive free/reduced lunch, reflecting the growing poverty of Milwaukee families with children enrolled in the district. Large increases are evident at the middle and high school levels.

![Free/Reduced Lunch By Grade Level](image-url)

Student Mobility:

There is a great deal of movement by students both within the school year and from year to year. Within the school year, about 12% of all elementary grade students, 15% of middle grade students and 21% of all high school students enter a new school during the year. While the elementary and middle school rates have remain unchanged, the high school rate has been increasing.

Each year, about one of every three students enrolls in a different school (excluding newly entered students like kindergarteners and 9th graders and exiting students like 5th and 8th graders).
Students with Disabilities and English Language Learners:

The Milwaukee Public Schools has growing percentages of both students with disabilities and students who are English Language Learners (ELL). The percentage of students with disabilities has grown by almost 2 ½ percentage points over just the last six years, while the percentage of ELL students has risen by about 50% from 5.0% to 7.6%. The largest percentage of students with disabilities are at the middle and high school levels, while proportionately there are more ELL students at the elementary level.

3rd Friday in Sept. enrollment; no. of students with disabilities and English Language Learners divided by total student enrollment, aggregated by grade level.
Student Attendance Rate:

The highest student attendance rate is at the elementary level (grades KG to 5) 92.6%, followed by the middle grades (grades 6 to 8) at about 89%. The lowest student attendance rate is at the high school level—just under 80%.

Student attendance rates have remained fairly stable over the last five years at the elementary grade level and for the last three years in the middle grades. However, the overall rate for high school declined almost a full percentage point in 2006-07.

Student Attendance Rate
By Grade Level
2002-03 to 2006-07

End of year attendance: total days of actual attendance divided by total possible days of attendance; aggregated by grade level (K-5, 6-8, 9-12)
High School Dropouts:

Prior to 2003-04, MPS reported the annual high school dropout rate that averaged about 10% over the previous five years. For the last three years, the state has determined and reported the annual high school dropout rate for grades 9 to 12. The 2005-06 reported MPS dropout rate was 8%, slightly higher than the prior year.

High School Graduation Rate:

The district’s high school graduation rate has increased overall, the graduation rate has increased from 52% in 1999-00 to 68% in 2005-06.

The graduation rate gap with the state has declined from 37 points in 1999-00 to 21 points in 2005-06.

The lowest graduation rates are for Native Americans and African Americans; the highest are for Whites and Asians. Overall, girls have higher graduation rates than boys, across all ethnic groups. High school graduation rates for 2006-07 are currently being compiled by the state and will be released later in 2007.

Wisconsin Knowledge and Concepts Examinations-Criterion Referenced Test:
Charts on the next two pages illustrate performance of MPS students on the state’s test at selected grades over the past several years. At the elementary level, performance in most subtests has been relatively static, although there was a strong increase in math performance in grade 4 in 2006-07. In the middle grades, continuous improvement is observed in reading, math, social studies, and science during the past several years. In grade 10, an improvement is evident in social studies. Following small gains in math for two years, a decline occurred in 2006-07.

MPS recorded significant increases in the percentage of its students scoring at/above the proficient level on the WKCE in 2006-07. The district recorded overall proficiency increases (compared to the year before) in 5 of the 7 grades assessed in Reading and 6 of 7 grades in Math.

The achievement gap between the district and the state declined in 10 of the 14 assessments in reading and math across all grades tested (grades 3, 4, 5, 6, 7, 8, 10) in 2006-07 compared to the year before. Achievement gaps in the district between students of color and their white peers are persistent and large. Although gaps are increasing for African American 10th graders in both reading and math, a sizable reduction in the gap was evident in 2006-07 in reading for 4th and 8th graders. In math, the gap increased for 8th graders but decreased for 4th graders.

The gap for Hispanic students is lower than it is for African Americans. In math, the general trend is toward a decreasing gap between Hispanics and whites. In reading, there was a large increase in the gap for 10th graders. Fourth grade gaps in reading show two years of decline, although there was a slight increase in 2006-07. The gap at grade 8 remained the same as the prior year.
Wisconsin Knowledge and Concepts
Reading - Language Arts - Math - Science - Social Studies

Percent of Students Enrolled -- Scoring At/Above Proficient
2002-03 to 2006-07

Grade 4

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>62%</td>
<td>67%</td>
<td>61%</td>
<td>62%</td>
<td>75%</td>
</tr>
<tr>
<td>Language Arts</td>
<td>64%</td>
<td>59%</td>
<td>58%</td>
<td>52%</td>
<td>76%</td>
</tr>
<tr>
<td>Math</td>
<td>53%</td>
<td>46%</td>
<td>44%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td>Science</td>
<td>46%</td>
<td>47%</td>
<td>49%</td>
<td>49%</td>
<td>49%</td>
</tr>
<tr>
<td>Social Studies</td>
<td>75%</td>
<td>76%</td>
<td>77%</td>
<td>78%</td>
<td>77%</td>
</tr>
</tbody>
</table>

Grade 8

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>55%</td>
<td>59%</td>
<td>56%</td>
<td>52%</td>
<td>52%</td>
</tr>
<tr>
<td>Language Arts</td>
<td>42%</td>
<td>37%</td>
<td>37%</td>
<td>32%</td>
<td>39%</td>
</tr>
<tr>
<td>Math</td>
<td>34%</td>
<td>29%</td>
<td>36%</td>
<td>40%</td>
<td>39%</td>
</tr>
<tr>
<td>Science</td>
<td>33%</td>
<td>32%</td>
<td>36%</td>
<td>39%</td>
<td>39%</td>
</tr>
<tr>
<td>Social Studies</td>
<td>46%</td>
<td>50%</td>
<td>52%</td>
<td>52%</td>
<td>52%</td>
</tr>
</tbody>
</table>

Grade 10

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>40%</td>
<td>45%</td>
<td>41%</td>
<td>39%</td>
<td>33%</td>
</tr>
<tr>
<td>Language Arts</td>
<td>38%</td>
<td>35%</td>
<td>41%</td>
<td>39%</td>
<td>34%</td>
</tr>
<tr>
<td>Math</td>
<td>28%</td>
<td>29%</td>
<td>31%</td>
<td>29%</td>
<td>26%</td>
</tr>
<tr>
<td>Science</td>
<td>25%</td>
<td>29%</td>
<td>26%</td>
<td>29%</td>
<td>29%</td>
</tr>
<tr>
<td>Social Studies</td>
<td>33%</td>
<td>34%</td>
<td>37%</td>
<td>38%</td>
<td>39%</td>
</tr>
</tbody>
</table>
Milwaukee Public Schools
WKCE-CRT - Percent of Students Enrolled – Scoring At/Above Proficient
Reading and Mathematics
Percentage Point Difference: Whites to African Americans and Whites to Hispanics
2003-04 to 2006-07

White to African American

Reading

Mathematics

White to Hispanic

Reading

Mathematics

Data Source: State WKCE and WAA files in district Data Warehouse; percent of all students enrolled scoring at/above proficient, aggregated by ethnicity.
APPENDIX 2 – Research Bibliography


Bottoms, G. & Anthony, K. (May 2005). *Project lead the way: a pre-engineering curriculum that works*; SREB (Southern Regional Education Board) Research Brief.


National Science Education Standards.


Wisconsin Department of Public Instruction. (2000). *Wisconsin Teacher Standards*.


(1) The teacher understands the central concepts, tools of inquiry, and structures of the disciplines he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for pupils.

(2) The teacher understands how children with broad ranges of ability learn and provides instruction that supports their intellectual, social, and personal development.

(3) The teachers understands how pupils differ in their approaches to learning and the barriers that impede learning and can adapt instruction to meet diverse needs of pupils, including those with disabilities and exceptionalities.

(4) The teacher understands and uses a variety of instructional strategies, including the use of technology to encourage children’s development of critical thinking, problem solving, and performance skills.

(5) The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning and self-motivation

(6) The teacher uses effective verbal and nonverbal communication techniques as well as instructional media and technology to foster active inquiry, collaboration, and supportive interaction in the classroom

(7) The teacher organizes and plans systematic instruction based upon knowledge of subject matter, pupils, the community, and curriculum goals.

(8) The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the pupil.

(9) The teacher is a reflective practitioner who continually evaluates the effect of his or her choices and actions on pupils, parents, professionals, in the learning community and others and who actively seeks out opportunities to grow professionally.

(10) The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support pupil learning and well being and who acts with integrity, fairness and in an ethical manner.
APPENDIX 4 – MPS Information and Technology Program Policies

Children’s Internet Protection Act Policy
Administrative Policy #8.47 – Children’s Internet Protection Act – was adopted by the Milwaukee Board of School Directors on June 23, 2005

Acceptable Use and Copyright Policies
Administrative Policy #6.34 – Staff Acceptable Use – was adopted by the Milwaukee Board of School Directors on January 25, 2007. This policy covers copyright provisions.

Administrative Policy #8.48 – Student Acceptable Use – was adopted by the Milwaukee Board of School Directors on January 25, 2007.

Materials Selection and Materials Reconsideration Policy
Administrative Policy #9.10 – Public Complaints About the Curriculum or Instructional Materials – was adopted by the Milwaukee Board of School Directors on September 28, 1983 and reaffirmed on February 22, 1995. This policy references the administrative procedures for the selection and reconsideration of instructional and library materials.

Technology Concerns for Students with Special Needs Policy
Administrative Practice and Procedures – Assistive Technology in the Individualized Education Plan – are implemented as administrative practice and are included in the district’s newly revised IEP Handbook. Draft policy to be reviewed by the City Attorney’s Office and submitted to the Milwaukee Board of School Directors for review and adoption.

Inter-Library Loan Policy
Administrative Practice and Procedures – Inter-Library Loan – are implemented as administrative practice. Draft policy to be reviewed by the City Attorney’s Office and submitted to the Milwaukee Board of School Directors for review and adoption.
Administrative Policy 8.47
CHILDREN’S INTERNET PROTECTION ACT

(1) **Internet Safety Policy**

It is the policy of Milwaukee Public Schools (MPS) to:

(a) ensure that users (staff, students, and others) will not have access to inappropriate materials when using the Internet, E-mail, chat rooms, or other forms of direct electronic communications or services provided by Milwaukee Public Schools;

(b) prevent the unauthorized access and other unlawful activities of users (staff, students, and others) on line;

(c) prevent the unauthorized disclosure, use, and dissemination of personal identification information regarding users (staff, students, and others), and


(2) **Definitions**

(a) Child Pornography — Any visual depiction which involves the use of a minor engaging in sexually explicit conduct; or where a depiction appears to be of a minor or has been created, adapted, or modified to appear that a minor is engaging in such conduct; or is advertised, promoted, presented, described, or distributed in a manner that conveys the impression that the material is or contains a visual depiction of a minor engaging in sexually explicit conduct.

(b) Harmful to Minors — Any picture, image, graphic image file, or other visual depiction that, taken as a whole and with respect to minors, appeals to a prurient interest in nudity, sex, or excretion; depicts, describes, or represents, in a patently offensive way with respect to what is suitable for minors, an actual or simulated sexual act or sexual contact, actual or simulated normal or perverted sexual acts, or a lewd exhibition of the genitals; and taken as a whole, lacks serious literary, artistic, political, or scientific value as to minors.

(c) Inappropriate Materials — Any material that is obscene, is child pornography, or is harmful to minors.

(d) Obscene — Any material or performance when, considered as a whole, predominantly appeals to a prurient interest in sex; or that depicts or describes in a patently offensive manner actual or simulated sexual acts, sexual contact, nudity, sadism, masochism, excretion, or a lewd exhibition of the genitals; and that lacks serious literary, artistic, political or scientific value.

(e) Technology Protection Measures — A specific technology that blocks or filters internet access.

(3) **Prevention of Access to Inappropriate Materials**

Technology protection measures shall be used, to the extent practicable, to block or filter access to inappropriate material on the Internet, E-mail, chat rooms, and other forms of direct electronic communications/services by MPS staff, students, and other authorized users receiving technology services from MPS. Specifically, technology protection measures shall be used to prevent access to visual depictions of material deemed obscene or to be child pornography, or to any material deemed harmful to minors. Subject to staff supervision, technology protection measures may be disabled or, in the case of minors, minimized only for bona fide research or other lawful purposes.
(4) Prevention of Inappropriate Network Usage

To the extent practicable, steps shall be taken to promote the safety and security of users of the MPS online computer network when using electronic mail, chat rooms, instant messaging, and other forms of direct electronic communications/services by MPS staff, students, and other authorized users receiving technology services from MPS. Specifically, as required by the Children's Internet Protection Act, prevention of inappropriate network usage includes prevention of (a) unauthorized access, including so-called "hacking," and other unlawful activities, and (b) unauthorized disclosure, use, and dissemination of personal identification information regarding minors.

(5) Supervision and Monitoring

(a) It shall be the responsibility of the school principal and/or designee to supervise and monitor usage of the online computer network and access to the Internet in accordance with this policy and the Children's Internet Protection Act.

(b) Procedures for disabling or otherwise modifying any technology protection measures shall be the responsibility of the Director, Division of Technology, or his/her designated representatives.
ADMINISTRATIVE POLICIES OF THE
MILWAUKEE PUBLIC SCHOOLS

Administrative Policy 6.34
STAFF ACCEPTABLE USE POLICY (AUP)

<table>
<thead>
<tr>
<th>History</th>
<th>Adopted 1-25-2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Coding</td>
<td></td>
</tr>
<tr>
<td>Legal Ref.</td>
<td></td>
</tr>
<tr>
<td>Contract Ref.</td>
<td>Admin. Policy 8.47 Child's Internet Protection Act</td>
</tr>
<tr>
<td></td>
<td>Admin. Policy 8.48 Student Acceptable Use Policy (AUP)</td>
</tr>
</tbody>
</table>

1. MILWAUKEE PUBLIC SCHOOLS ENTERPRISE SYSTEM (ES)

The MPS Enterprise System is defined as any electronic device that is stand-alone or connected via LAN and/or WAN, and sends or receives voice, video, or data information through an MPS resource. The Internet is a global network made up of many smaller contributing networks to support the open exchange of information. Together the MPS ES and Internet represent powerful educational resources.

2. PROHIBITED ACTIVITIES

MPS staff members, or staff members of MPS contracted schools that serve MPS students, requesting an ES account understand and agree that use of the ES or Internet through the ES for the following is prohibited.

(a) ILLEGAL ACTIVITIES

Illegal activities shall be defined as actions in violation of local, state and/or federal laws including fraud or violation of copyright or other contracts governing institutional or third party copyright, license agreements or other contracts.

(b) Inappropriate Activities

Inappropriate use of the ES shall be defined as any use which does not support the educational goals and mission of MPS:

1. political, commercial or financial gain;
2. intentional disruption of ES services, including degrading of equipment or system performance or wasteful use of the finite system;
3. sharing of network accounts or access codes with others is strictly forbidden.

(c) Consequences of Violation

1. Consequences of violation may include but are not limited to:
   a. suspension or revocation of Internet or ES access;
   b. legal action and prosecution when appropriate;
   c. disciplinary action up to and including discharge.

2. Under State Statutes, section 947.0125, staff may be subject to criminal sanctions, if by means of signs, signals, writing, images, sounds or data, they threaten, intimidate, abuse, or harass another person through electronic mail or other computerized communication systems.

3. E-mail accounts and file materials are not private in nature and remain subject to monitoring by the school district. The school and district network administrators, with due regard for the right of privacy of users and the confidentiality of their data, have the right to suspend or modify Internet access privileges and examine files, passwords, account information, printouts, tapes, and any other material that may aid in maintaining the integrity and efficient operation of the system. Designated staff may search the file system for potential violations and when there is evidence of a possible violation may view users' files, read mail, monitor keystrokes, and otherwise observe users' activities.

4. The use of the Internet is a privilege, not a right, and inappropriate use will result in a cancellation of those privileges.

2.19.2007
(3) **NETIQUETTE**
   (a) Be polite. Do not be abusive in any message to others.
   (b) Use appropriate language. Do not use profanity, obscene comments, sexually explicit material, or expressions of bigotry, racism, or hate. Illegal activities are strictly forbidden.
   (c) Do not reveal personal addresses or telephone numbers of others.
   (d) Do not use the network in such a way that you would disrupt the use of the network by other users.

(4) **SECURITY**
   (a) Under no circumstances should you give anyone your password.
   (b) Do not reveal your personal address or telephone number.

(5) **VANDALISM**
   (a) Vandalism is defined as any malicious attempt to harm or destroy electronic information including data or equipment.
   (b) Uploading or creation of computer viruses is considered vandalism.

(6) **RULES AND CODE OF ETHICS**
   (a) Staff members should act honorably and in a manner consistent with ordinary ethical obligations.
   (b) Staff members will not use the computer resources for non-educational activities.
   (c) Staff members will not make unauthorized copies of software in violation of copyright laws.
   (d) Staff members represent their schools and should do so in ways that are positive.

(7) **SIGNATURE BLOCK**
    I have read both sides of this document and understand my privileges and responsibilities.
    (Original Ink only)
    
    Signature ___________________________ Date ________________
    
    Full Name PRINTED (include your middle initial)
    ___________________________________________________________________________
    
    Home Address ____________________________
    
    City ___________________________ State ___ Zip _____________
    
    Last four digits of Social Security number ________________
    
    Home Telephone ______-________-__________
    
    School Site or Department ______________ Site Number (three digits) ______________
    
    Position or Title ____________________________
    
    Please sign and return to the Milwaukee Public Schools, Department of Technology, Room 154, 5225 West Vliet Street, Milwaukee, WI 53208 Phone 414-475-8315

---

**ADMINISTRATIVE POLICIES OF THE MILWAUKEE PUBLIC SCHOOLS**
2.10.2007
(8) **LISTSERV ETIQUETTE AND GUIDELINES FOR MPS COMMUNICATIONS**

Listservs are the primary means of communication within the district. The email accounts created for each school/department are intended as an expedient delivery form of time sensitive or important information regarding business operations in Milwaukee Public Schools. The following guidelines and standards of use should be used when using the “all” email and listserv accounts (i.e. allsites, high, middle, elem, k8, engineers, foodmgrs) or when sending information to multiple sites in communicating with this electronic tool.

(a) **LISTSERV GUIDELINES**

Using the “allsites” (or multiple sites, i.e. high, middle, elem, k8) option:

1. Use a meaningful subject line. When people receive email, the first information they look at is the subject line. The subject line is kept in future responses aiding readers in following a discussion. The subject announces the topic and helps the reader determine its priority. With the quantity of messages that are sent, making it easier for those responsible for redistributing information will be helped by this simple consideration.
2. Keep the message brief. Messages should be short and to the point. If some receiving the message may need further details, include contact information for individual email responses or voice contacts that are not sent through the listserv.
3. Limit Attachments. While it is possible to send up to a 1MB file through the listserv, many factors come into play. Sending attachments, if not done efficiently, can cause many problems for members of the listserv, the servers, and the owner of the listserv. Platforms and applications must be considered as well as size of documents and the size of email mailboxes. If not carefully considered, mailboxes will be filled, allowing no new messages to be received, numerous bounced messages will show up in the listserv owner’s mail, and server space will become limited. A strategy highly recommended would be to include information in your message that would direct those in need of the file either to a web address for downloading or to instructions on sending an individual request for sending information to one person rather than an entire list.
4. Keep messages about business operations only. The “all” or multiple sites lists should be used only for critical information pertaining to MPS Operations. These lists should not be used for retirement announcements, invitations, jokes, or informal inquiries and conversations.
   a. Death notices may be sent only with the consent of the appropriate family member.
   b. Information that is sent is to be of importance and must require response or action on the part of the school or department, e.g., “Due to weather conditions, all early school bus routes will load 30 minutes early today. Please see early release policy guidelines.” “Change in Location – All teachers assigned to Scheduling Inservice please report to the Professional Development Center on Friday June 30. NOT Central Services Auditorium as announced prior to this communication.”
   c. Keeping the purpose of the “all” listservs to important business information allows those responsible to respond and to act upon information. If the lists are cluttered with information not important to the audience, it will go unread and result in no communication or action.
   d. Messages requiring action by school administrators require the prior approval of Leadership Services.
5. No confidential or personal information should be transmitted via a listserv. Do not send student or staff personal information through the listserv. Student and staff information should never be sent to users outside the MPS network. Keeping staff and student information confidential and secure is a high priority for the district.
6. Reply Requested: Some communications will require a school or department to submit information back to the author of the message. Information requested should be sent to an email address of an individual or school account and not to a listserv.

7. Listservs are titled as site number followed by staff (012staff), or allsites, high, middle, elem, k8, foodmgrs, engineers, etc. Individual accounts are site number only or an individual’s email ID:
   (123@mail.milwaukee.k12.wi.us
   smthkJ@email.milwaukee.k12.wi.us

8. Use of the MPS listserv or email accounts for distribution of bargaining unit information or solicitations by vendors or institutions other than MPS without prior approval of Labor Relations and Administrative Accountability is not permitted. Communications are for MPS business only through these accounts.

(b) Using Listserv to Communicate with Building Staff

1. Listservs, which have been created for each site number, can streamline communications within schools or departments, allowing for action and response, and become a vital tool in school operations if used efficiently and within agreed-upon guidelines.

2. The listserv can serve as the primary communication tool within a workgroup. When information is received from the “allsites” or other lists, a local staff is responsible for monitoring this email and forwarding the email to the appropriate personnel by sending the message to the workgroup list or “xxxstaff” list with any building-specific instructions or information.

3. The site listserv can also be used for the following:
   a. daily announcements
   b. any school-based communications previously copied and placed as hard copy in mailboxes
   c. discussion of school-related business.

4. Each individual listserv may take on a personality and culture of its own that will drive the acceptable procedures. Each listserv should have a person who moderates it for appropriate MPS content. Each listserv needs to have a site or departmental “owner” to be responsible for maintaining listserv enrollment.

(c) General Listserv Etiquette

When sending messages to a list, please keep the following suggestions in mind. They will help keep the list user-friendly for everyone.

1. Please include a subject line in each posting (it’s a good idea for ALL email).
2. When responding to a listserv, keep your messages brief.
3. Include a portion or a summary of the message you are responding to, but don’t forward the entire message.
4. At the end of your message, include your name and your electronic mail address (this is your electronic “signature”). Long signatures are discouraged. They may be humorous the first time, but get old quickly. Some idle of the time spent having to skim over them. 2-4 lines should be sufficient to include any necessary information.
5. Be extremely careful when replying to the author of a list message. Your mail program settings may be set so the default will send your reply to the entire list if you simply use a reply command. See your building’s Technology Coordinator for assistance or call the Technology Support Center if you need assistance. Check your outgoing message before sending to verify whether the message is going to an individual or to an entire list.
6. Think before you post. “Do I really want to say this to the world (list)?” Reread what you wrote. “Did I really say what I intended to?” Once a message is sent, it can’t be retrieved.

ADMINISTRATIVE POLICIES OF THE MILWAUKEE PUBLIC SCHOOLS
2.10.2007
7. Replies to requests for information: Some large lists have a policy of sending information privately to the requester. The requester then summarizes to the list. This can cut down on traffic, but it tends to reduce the "give and take" that some lists value.
8. Please be considerate of others. Through inexperience, list members may inadvertently violate the above suggestions. A private message to the offender from an experienced friend or from the list owners is more appropriate than a public flame.
9. Please participate! Your ideas are important. Just because you think everyone knows something doesn't mean they do. If you're not sure, send the posting to an experienced friend on the list (or the list owner) to see if the information may be valuable. Your posted response to the list should be more than "I agree" or "thank you for responding." Either add to the discussion or send these types of messages directly to an individual.
10. Each list has its own character, just like any "real" grouping of people (such as a party or a meeting). The list functions best when people respect the character of the list. It's also good to respect the differences among list members and have a certain tolerance for our individual eccentricities.
11. Avoid posting messages without any useful contents. This includes messages containing only snide remarks to a previous poster, etc. This includes "I agree" or "Great Post" or "Me Too" messages to the entire list. This is a waste of resources. If you wish to send this kind of message, please send it to the individual you are complementing.
12. Political or Commercial messages should not be posted to the list.
14. Do not post any defamatory, abusive, profane, threatening, offensive, anticompetitive, or illegal materials. MPS does not condone any such materials or accept any resulting liability, including antitrust liability.
ADMINISTRATIVE POLICIES OF THE
MILWAUKEE PUBLIC SCHOOLS

Administrative Policy 8.48
STUDENT ACCEPTABLE USE POLICY (AUP)

History
Adopted 1-25-2007

Previous Coding

Legal Ref.

Contract Ref.

Cross Ref.
Admin. Policy 8.47 Children's Internet Protection Act
Admin. Policy 6.34 Staff Acceptable Use Policy (AUP)

(1) OVERVIEW
(a) In a number of classes we are introducing students to electronic mail and other global information resources, including the Internet. The Milwaukee Public Schools has developed a policy to enhance children's education through the use of the Internet.

(b) Children will be able to communicate electronically with other computers on the information superhighway. The Internet allows children the opportunity to immediately reach out to people and information anywhere in the world. The student becomes a member of a global village.

(c) The vast majority of the information on the Internet has positive educational value. As with commercial TV programming, some of the discussions available to students might be considered in poor taste. The Milwaukee Public Schools will have special computer hardware in place that will restrict access to adult material and undesirable topics; however, it is not possible to completely block out all objectionable topics. As parents and teachers, we must teach students to be responsible consumers of information. Students in classes will be encouraged to explore local and worldwide information sources in a responsible manner.

(d) With this educational opportunity comes personal responsibility. Approved electronic activities must not contain profanity, obscene comments, sexually explicit material, or expressions of bigotry, racism, or hate. Messages should not contain personal information that you would not want a stranger to have. This would include your name, address, telephone numbers, charge cards numbers, social security numbers or other personal information.

(e) Inappropriate use of the Internet will result in the loss of the privilege to use this educational tool.

(f) Parents are legally responsible for their children's actions. The importance of following these policies must be stressed to children.

(2) PARENTAL CONSENT
(a) Parents must indicate their acceptance of the terms of this policy by completing the lower portion of the Acceptable Use Contract. These signatures indicate that the parent has read the document and that the child agrees to adhere to the policies regarding Internet usage.

As a user of the MPS Internet resource, I understand the policy listed above and on the back of this contract. I realize that non-adherence to this policy can result in the loss of this privilege.

School __________________________ Date __________________________

Student Last Name (please print) __________________________________________

First Name ______________________ Init. ___ Student ID (7 digit) ____________

Student Signature __________________________ Telephone ________________

I agree to let my child use the MPS Internet resource. ____YES ____NO

2.19.2007
Administrative Policy 6.34

(check one) _____K-12 filtering/blocking  _____Pre-approved Sites Only
(see reverse side for detail)

Parent Signature ____________________ Teacher Signature ____________________

(b) The use of the Internet is a privilege, not a right, and inappropriate use will result in a cancellation of those privileges and possible school discipline in accordance with the MPS Student Handbook.

(c) Parents should feel free to contact their children's schools if further clarification is needed.

(3) NETIQUETTE

(a) Be polite. Do not be abusive in any message to others.

(b) Use appropriate language. Do not use profanity, obscene comments, sexually explicit material, or expressions of bigotry, racism, or hate. Illegal activities are strictly forbidden.

(c) Do not reveal personal addresses or telephone numbers of others.

(d) Do not use the network in such a way that you would disrupt the use of the network by other users.

(4) SECURITY

(a) Under no circumstances should a student give anyone his or her password.

(b) Students must not reveal their personal addresses or telephone numbers.

(c) Any user identified as a security risk or as having a history of problems with other computer systems may be denied access to the Internet.

(d) Students have the right to appeal any restriction or access privileges.

(5) VANDALISM

(a) Vandalism is defined as any malicious attempt to harm or destroy electronic information including data or equipment.

(b) Uploading or creation of computer viruses is considered vandalism.

(6) RULES AND CODE OF ETHICS

(a) The student should act honorably and in a manner consistent with ordinary ethical obligations.

(b) The student will not use the computer resources for non-educational activities.

(c) The student will not make unauthorized copies of software in violation of copyright laws.

(d) The student should respect the rights and privacy of other authorized users.

(e) The student represents his/her school and should do so in ways that are positive.

(7) STUDENT ACCOUNT TYPES

<table>
<thead>
<tr>
<th>Access Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-12 Account</td>
<td>Filtering and blocking of Internet sites. Currently thousands of known sites are available to MPS students.</td>
</tr>
<tr>
<td>Pre-approved Account</td>
<td>Selected sites determined by a parent advisory group, administrators and teachers. A limited number of pre-approved sites are available.</td>
</tr>
</tbody>
</table>

(8) DISCLAIMERS

(a) The Milwaukee Public Schools is not responsible for the accuracy or the quality of information obtained through the Internet.

(b) Under State Statutes, Section 947.0125, students may be subject to criminal sanctions if, by means of signs, signals, writing, images, sounds, or data, they threaten, intimidate, abuse, or harass another person through electronic mail or other computerized communication systems.
(c) E-mail accounts and file materials are not private in nature and remain subject to monitoring by the school district. The school and district network administrators, with due regard for the right of privacy of users and the confidentiality of their data, have the right to suspend or modify Internet access privileges and examine files, passwords, accounting information, printouts, tapes, and any other material that may aid in maintaining the integrity and efficient operation of the system. Designated staff may search the file system for potential violations and, when there is evidence of a possible violation, may view users' files, read mail, monitor keystrokes, and otherwise observe users' activities.
Administrative Policy 9.10
PUBLIC COMPLAINTS ABOUT THE CURRICULUM OR INSTRUCTIONAL MATERIALS

(1) It is the policy of the Board in regard to instructional and library materials that:
   (a) to the extent possible, direct participation of professional staff will be employed in the selection process;
   (b) selection by the professional staff will be as democratic as possible to provide appropriate materials for students that reflect the pluralistic nature of American society;
   (c) efforts by outside groups seeking to censor materials in the schools and prevent access by teachers and students to a well-rounded and balanced collection of materials will be resisted.

(2) Concerned individuals and groups should use the complaint procedure which the school district has established to hear such concerns.
A FRAMEWORK FOR SELECTION OF INSTRUCTIONAL AND LIBRARY MATERIALS

It is the practice of Milwaukee Public Schools to provide a wide range of instructional materials on all levels of difficulty, with diversity of appeal and the presentation of different points of view and to allow the review of allegedly inappropriate instructional materials through established procedures.

1. **Objectives of Selection**

   In order to assure that the school library media program is an integral part of the educational program of the school, the following objectives of selection are adopted:

   - To provide materials that will enrich and support the curriculum and the personal needs of the users, taking into consideration their varied interests, abilities, and learning styles;
   
   - To provide materials which realistically represent our pluralistic society and reflect the contributions made by diverse groups and individuals to our American heritage;
   
   - To provide materials that will stimulate growth in factual knowledge, literary appreciation, aesthetic values, and ethical standards;
   
   - To provide a background of information which will enable students to make intelligent judgments in their daily lives;
   
   - To provide materials on opposing sides of controversial issues so that users may develop, under guidance, the practice of critical analysis;
• To place principle above personal opinion and reason above prejudice in the selection of materials of the highest quality in order to assure a comprehensive media collection appropriate for the users.

2. Responsibility For Selection

The responsibility for selection of instructional materials at the district level is under the supervision of the Superintendent or his/her designee, and at the building level is under the supervision of the principal.

A. Library Media Center

While the selection of materials involves many people, including library media specialists, teachers, students, supervisors, administrators, and community persons, the responsibility for coordinating and recommending the selection and purchase of instructional materials for the library media center rests with the certified library media personnel, or teacher-library committee, if there is no certified library media specialist in the building.

B. Classroom

Selection of classroom instructional materials is made by classroom teachers and departments under the supervision of the principal and involving staff of the Department of Curriculum and Instruction (Teaching and Learning) where appropriate.

C. Textbooks

Responsibility for coordinating the selection of textbooks rests with the Department of Curriculum and Instruction.

3. Criteria for Selection

Educational goals of the local school district, individual student learning modes, teaching styles, curricular needs, faculty and student needs, existing materials and networking arrangements should be considered in developing the media collection. Guidelines for the evaluation and selection of curricular and non-curricular resources are listed.

A. Curricular materials should:

• Contribute to the objectives of the instructional program;
-3-

- Be multicultural and relevant to today's world;
- Represent artistic, historic, and literary qualities;
- Reflect problems, aspirations, attitudes and ideals of a society;
- Be appropriate to the level of the users;
- Represent differing viewpoints on controversial subjects;
- Provide a stimulus to creativity.

B. Schools serving communities in which other languages are used should make efforts to accommodate the needs of students for whom English is a second language.

C. Non-curricular materials should fulfill the individual interests and needs of students apart from the instructional program but also meet the criteria listed above.

D. All materials selected should be of good physical quality and not be cumbersome to use by students.

4. Procedures For Selection

Procedures for selection of materials may vary with the type of material and its intended use.

A. Library Media Center

In selecting materials for the school library media center, the certified library media specialist or teacher-library committee will:

- Evaluate the existing collection;
- Assess curricular and student non-curricular needs;
- Examine materials and consult reputable, professionally-prepared selection aids;
- Solicit recommendations from faculty and students;
- Judge gift materials by the same criteria as purchased materials;
- Observe copyright laws in selecting and using all materials.
B. Classroom Materials

Classroom materials will be selected by a teacher committee as determined by the principal and involving staff of the Department of Curriculum and Instruction (Teaching and Learning).

C. Textbooks

Selection of textbooks follows different procedures and is accomplished by textbook evaluation committees in accordance with established policy.

Selection is an ongoing process which includes the removal of materials no longer appropriate and the replacement of lost and worn materials still of educational value. Selection of materials to discard follows the same criteria as selection for acquisition.

5. Procedures For Reconsideration of Materials

Occasional objections to instructional materials will be made, despite the quality of the selection process. Efforts by outside groups seeking to censor materials in the schools and prevent access by teachers and students to a well-rounded and balanced collection of materials must be resisted. In the event of a complaint to anyone in the district, the following procedure must be adhered to in order that materials are reviewed in a consistent and equitable manner throughout the district.

A. Inform the complainant of the selection procedure.

B. The principal will attempt to resolve the complaint at the school level, making use of the staff members from the Department of Curriculum and Instruction where appropriate.

C. If the complaint cannot be resolved as in Step B, the complainant should submit a formal “Request for Reconsideration of Instructional Materials” to the principal.

D. The principal will forward the complaint to the Director of Curriculum and Instruction.

E. The Director of Curriculum and Instruction will make a decision concerning the materials and send a copy of the decision to the complainant and the principal.

F. If the complainant wishes to appeal the decision rendered by the Director of Curriculum and Instruction, such appeal must be in writing to the Deputy Superintendent.
G. The Deputy Superintendent will provide a final review and send a copy of his/her decision to the complainant, the principal, and the Director of Curriculum and Instruction.

In the event a school staff member or principal desire the re-evaluation of material, the above procedure should be followed, beginning at Step C. In the event that materials adopted through the established process result in a complaint, the above procedure should be followed beginning with Step E.
CITIZEN’S REQUEST FOR RECONSIDERATION OF INSTRUCTIONAL AND LIBRARY MATERIALS

Author: ______________________________ Hardcover ______ Paperback ______ Other ______

Title: ____________________________________________________________

Publisher (if known): _____________________________________________

Request initiated by: _______________________________________________

Address: _________________________________________________________

City: __________________ State: ______ Zip: ______ Telephone: ______

School: _________________________________________________________

Complainant represents: 

____ HImself/Herself

____ Name of __________

Organization: ___________________________________________________

____ Identify other group: _________________________________________

(If objection is to material other than a book, please change the wording of the following questions so that they apply.)

1. To what in the book do you object? (Please be specific, cite pages.)

2. What do you feel might be the result of reading this book?

3. For what age group would you recommend this book?

4. Is there anything good about this book?

5. Did you read the entire book? ________ What parts?

6. Are you aware of the judgment of this book by critics?

7. What do you believe is the theme/intent of this book?

8. What would you like your library/school to do about this book?

____ Do not assign/lend it to my child.

____ Withdraw it from all readers/students as well as my child.

____ Send it back to the staff for re-evaluation.

9. In its place, what book would you recommend that would convey as valuable a picture and perspective of the subject treated?

______________________________

Signature of Complainant:

(Adapted from a form developed by the National Council of Teachers of English)
General Information
Assistive Technology services may be required to modify teaching approaches and integrate devices into educational environments. Assistive technology services are any services that directly assist an individual with a disability in the selection, acquisition, or use of an assistive technology device. Assistive Technology services may include staff training, student training, equipment set-up, equipment maintenance, equipment repair, and more.

Assistive Technology Devices Defined
An assistive technology device is, “any item, piece of equipment, or product system whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a student with a disability.” (34 CFR Sec. 308.5 (a))

Examples of assistive technology devices include a variety of low-tech, no-tech solutions including highlighters, page-turners, book rests, picture communication boards. Additional solutions could include computer adaptations (touch windows, switches, voice output software programs), switches used for alternative access, augmentative communication devices, assistive listening devices and/or adaptive seating.

There are a variety of assistive technology devices. Equipment can be modified in many ways to accommodate the needs of a student. Appropriate selection of assistive technology devices is determined through student use with ongoing staff observation. A trial period using selected assistive technology devices, with proper documentation, can determine if the student requires the device to receive educational benefit.

Determining Assistive Technology Needs
The IEP Team determines if a student has a need for Assistive Technology. The IEP Team should include staff with the expertise to determine the assistive technology needs of a student, if such services are or may be needed. This may include assistance from school-based staff with assistive technology experience. If the school-based staff does not have the required expertise or assistive technology experience, the IEP Team can request assistance from the Department of Special Services’ Assistive Technology Staff. Forms to request assistance are on the MPS Portal and include:

“Request for Assistive Technology Supports” (AT-1)
“Assistive Technology On-Site Request Form” (AT-2)

Consideration of Assistive Technology At IEP Team Meetings
A decision regarding the need for Assistive Technology must be addressed at every IEP Team meeting. First, discuss and develop the IEP for the student. After developing the IEP, carefully consider the need for Assistive Technology. Consideration involves a thorough discussion about what specialized tools, not typically used in the general education environment, are needed by the student. The student may need to use specialized tools/devices to complete educational tasks in the least restrictive environment (LRE). Assistive Technology may be needed to assist fine motor skills, communication skills, learning skills, vision skills, listening skills, gross motor skills and more. If a
student needs specialized tools in order to benefit from education in the least restrictive environment, those tools are considered to be assistive technology and must be added to the IEP.

**Documenting Assistive Technology In the IEP**
When the IEP Team determines that assistive technology devices/services are required, documentation of those devices/services is recorded as follows:

**“Evaluation Report” (ER-1)**
Under “Previous Interventions” include any previous use of assistive technology. Under “Results of Those Interventions” include the effects of any assistive technology trials.

**“Present Level of Academic Achievement and Functional Performance” (I-4)**
Answer “Yes” to the Special Factors question. When describing the student's Present Level of Academic Achievement and Functional Performance (PLAAFP), include any use of assistive technology, including trials that are done or devices being used and are necessary to compensate for the student’s disabilities. This section sets the groundwork for determining the need for assistive technology.

**Examples:**
Indicate that the student is nonverbal or profoundly unintelligible or has multiple articulation errors that interfere with functional communication.

- **Student is profoundly unintelligible, unable to communicate basic wants and needs.**
- **Student is 95% unintelligible when the context is known.**

- State what modes the student chooses to communicate with (i.e., picture communication boards, a laptop with voice output, etc.). If the student has their own, personal device, name it and when the student received it.
  - **Student answers questions and states needs with picture communication boards.**
  - **Student uses his Hawk III, received in 12/2005, to ask for needs and answer class questions.**

- State the student’s physical condition that requires adaptations for participation in classroom activities.
  - **Student is unable to grasp writing utensils. Student accesses traditional keyboard with a specially designed hand splint.**

- Indicate that the student has a learning disability that interferes with the writing process.
  - **Student is unable to complete a written assignment without assistance.**

- State what type of adaptations/modifications student uses to complete written work.
  - **Student is able to complete a written assignment in a timely manner when using an Alpha Smart.**

- If assistive technology is already used, name it and how long the student has used it.
“IEP: GOALS (I-6a) OR IEP: GOALS AND BENCHMARKS/OBJECTIVES” (I-6b)

Assistive technology may be included in any goal or benchmark where it is needed. Where assistive technology is needed, add descriptive, assistive technology tags. With any high technology descriptions, include a low-tech alternative.

**SPECIFIC DEVICES:**

Do not put the names of specific devices in the goals/benchmarks; however specific tools can be listed in Section II, Supplementary Aids and Services, if a particular tool is required.

**EXAMPLES:**

- Student will complete a classroom report, with designated detail and information, once weekly, using a talking word processor and/or a tape recorder
- Student will correctly complete 70% of weekly written classroom assignments using a computer or a portable word processor or an alphabet board
- Student will outline the main ideas in each social studies chapter by using electronic webbing and/or highlighting tape
- Student will create a rhyming 10 word list once per week (add one of the following statements)
  - Using a talking word processor or alphabet board
  - Using a switch and talking word processor or with an eye pointing alphabet board
- Student will make choices in the classroom (add one of the following statements)
  - By eye pointing to objects 3 times a day
  - By eye pointing to pictures 1 time within 2 minutes of a verbal cue during each class activity
  - By touching a picture 3 times daily within 2 minutes of a verbal cue
- Student will retell the main elements of a story using (tag with one of the following statements)
  - Picture communication boards 1 time during story retelling activity
  - Voice output communication device/picture communication boards - 1 time during story retelling activity
  - Voice output dynamic display/picture communication boards 1 time during story retelling activity

**OR**

- Using a voice output communication device/picture communication board, Student will retell a story identifying main characters and correctly sequencing events 3 out of 4 times
- Using an adapted keyboard, Student will research 3 assigned topics each semester on the Internet.
- Using a talking word processor or tape recorder, Student will develop two oral presentations each semester which incorporate a logical sequencing of events and basic story elements
**HIGH TECH VS. LOW TECH:**
If you describe a high-tech tool in a student’s IEP, include a back-up tool appropriate for the child. If teachers or the student experience unforeseen difficulties with the high tech tool, a substitute back-up system must be available.

**“IEP: Special Factors” (I-5)**
Answer “Yes” to the Assistive Technology question and document in at least one section of the “Program Summary” (I-9). If yes, specify the particular device or service.

**“IEP: Summary of Transition Services” (I-8)**
If assistive technology is a necessary component of transition planning, it should be included in the summary of transition services.

The agency involved in the transition process must be aware of the assistive technology used by that student to access the curriculum and/or work environment.

**“IEP: Program Summary” (I-9)**

**SECTION I**
Assistive technology is designated as Special Education only if a goal has been generated addressing the mastery of a specific assistive technology tool or if assistive technology is needed but is not linked to a specific goal or benchmark. This is an extremely rare occurrence.

**EXAMPLE:**
Student will use a voice amplifier when giving oral reports in front of 15 or more people

**SECTION II**
If the Assistive Technology needed by a student is required in order for the student to benefit from their special education program(s), then Assistive Technology is a Related Service. Related Service activities include, among others, tool setup, programming, maintenance, backup procedures, etc. These activities generally require specialized skill and knowledge to complete.

**RESOURCE RESPONSIBILITY:**
The school is responsible for most resources required in the IEP. Some “high-tech” items are made available through the MPS-SSC Assistive Technology team.

When Assistive Technology is designated as a Related Service (“Program Summary” I-9, Section II), the Supplementary Aids and Services (“Program Summary” I-9, Section III) and/or Program Modifications or Supports (“Program Summary” I-9, Section IV) must be completed with a description of the service(s) and/or tool(s) needed and a listing of frequency, amount and location.
SECTION III
List the assistive technology tools or services needed to carry out the IEP. Generally, the IEP Team should describe the technology required with necessary characteristics or features, and not name specific tools unless no other tool is appropriate. List the frequency, amount and location. If assistive technology tools or services are required only under specific circumstances, those circumstances should be described under the “Conditions” column.

SECTION IV
Discuss and list the supports school personnel will need to implement the assistive technology.

When Assistive Technology is designated in “Program Modifications or Supports” (“Program summary” I-9, Section IV) a description of the service(s) and/or tool(s) needed and a listing of frequency, amount and location must be completed.

“Extended School Year” (I-11)
If assistive technology needs to be a part of the Extended School Year, it should be described in this section.
Milwaukee Public Schools

Draft Administrative Policy

Inter-Library Loan Policy

This policy serves as an agreement between the libraries of the Milwaukee Public Schools and, in the spirit of cooperation, with other districts to provide quality service. Interlibrary loan is deemed necessary to provide a larger range of materials to meet informational needs otherwise not presently available at the Milwaukee Public Schools. Interlibrary loan should not be viewed as a substitute for collection development. Although this policy is voluntary, it is based on the premise that it is in the best interest of the students of the Milwaukee Public Schools that the individual libraries collectively share their resources to further enhance the educational needs of the administration, faculty, and students.

Definition
Interlibrary loan is the procedure by which one library may request and borrow materials from another library for the use by an individual.

Purpose
The purpose of utilizing interlibrary loan is to obtain materials from other libraries that are not presently available in a library at Milwaukee Public Schools.

Scope
1. All types of materials regardless of format may be requested from a Milwaukee Public Schools library. The lending library will determine in each case whether the materials can be supplied.

2. Although the requested material may currently have an “in” status, it is not mandatory that the material be provided if the librarian considers it to be an item that will be used in the near future by a student or faculty member at the Milwaukee Public Schools District.

3. Milwaukee Public Schools District will lend materials to other libraries. The needs of the Milwaukee Public Schools District library must be considered as first priority.

4. All materials will be handled in compliance with current copyright regulations.
# Goal 1: Educator Proficiency – Administrators, teachers, and staff will continually develop information and technology proficiency to enhance their effectiveness and increase student achievement and close the achievement gap.

<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments (Status of implementation and/or plan adjustments)</th>
</tr>
</thead>
</table>
| 1.1 | Increase the usage of on-line collaborative tools by 10% each year. | - Measure and report changes in annual usage of collaborative tools.  
- 2004-05 end of year report serves as baseline. | ☒ Execution  
☒ Planning  
☒ Analysis | The use of on-line collaboration tools has grown significantly since 2004-05 school year. The district has expanded district support and training for on-line collaborative tools including virtual induction programs, on-line collaboration rooms and graduate coursework designed to support improved teaching and learning.  
According to the 2006-07 Climate Survey (staff respondents n=6,564), respondents reported extent of technology use in school to meet differing student needs of all students as 13.1% advanced use, 47.5 consistent use, 28.6 limited use, 1.5% no use, 8.3% reported not knowing, and .9% did not respond. This was an increase in use of technology from the 2005-06 school year. According to the 2005-06 Climate Survey (staff respondents n=6,311), respondents reported extent of technology use in school to meet differing student needs of all students as 12.2% advanced use, 46.7 consistent use, 30.2 limited use, 1.7% no use, 8.1% reported not knowing, and 1% did not respond.  
The use of Tapped In grew steadily over the last three years:  
2006-07 Tapped In MPS Building Members - 801  
2005-06 Tapped In MPS Building Members - 600  
2004-05 Tapped In MPS Building Members - 450 | The MPS Divisions of Technology and Research and Assessment will be developing a new biannual survey to capture more detailed data on the use of collaborative tools and staff development needed to increase capacity to use on-line technology tools. The new survey will to be administered at the start of the 2008-09 school year.  
The new MPS staff development register will report quarterly to senior management on the use of on-line collaborative tools beginning in the fall of 2008.  
Transition from Tapped In to Moodle as an online learning environment occurred over the 2006-07 school year. Starting in fall of 2007, only Moodle will be supported by the District. |
<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 1.2| Increase the use of information and technology resources for instruction, assessment, and instructional management by teachers, administrators and other district staff by 10% each year. | - Measure and report changes in annual usage of information and technology tools. 2004-05 end of year report serves as baseline.  
- Track the support and services provided by district-level Library Media Specialists and Technology Coordinators on a monthly basis. | ✔ Execution  
☐ Planning  
☐ Analysis | MPS hired an additional Library Media Specialist in 2006-07 which had an impact on site visits and the direct supervision of non-certified library staff.  
The use of online subscription services have expanded by 10% (based on usage reports) in 2006-07.  
Monthly collaboration with school leaders was provided via the Principal’s Institute. A site visit and support log has been established to track the support and services provided by district-level Library Media Specialists. | Increase the number of district-level library media specialists to support schools both with and without local library media specialists. All schools with grades 6-12 is required to have at a minimum a .2 Library Media Specialist in 2007-08.  
Six Site Administrators will be assigned to offer additional support for the central automation system at the district level.  
Continue to facilitate collaboration between library media staff and classroom teachers via learning teams in the alignment of standards and expectations for high performing library media centers and high performing classrooms.  
The district’s Teacher Instructional Practices Survey administered annually will be expanded to include increased collection of data on the use of technology resources for instruction, assessment, and instructional management. |
<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3</td>
<td>Increase the use of technology tools to send and receive information to and among community stakeholders by 10% each year.</td>
<td>Measure and report changes in annual usage of technology tools identified in Objective 1.3-01.</td>
<td>Execution ✔️ Planning ✔️ Analysis</td>
<td>MPS has developed and implemented an enterprise system that allows parents to see information about a child or children who are enrolled in Milwaukee Public Schools is available any time, day or night, when the parent logs on to the web-based system. Parents can monitor their child’s attendance; his/her standardized test results, the courses in which the child is currently enrolled, and grades for those courses. Parents can check the school calendar to verify days when your children are not required to be in school. Parents can also verify the information the school has entered for their child regarding home address, parent information, emergency contacts, and whether the child has a life-threatening medical condition. Families with Parent Assist accounts have risen from zero in 2004-05 to 1,496 in 2005-06 and 2,801 in 2006-07.</td>
<td>The MPS Portal was used as a vehicle for disseminating information and collecting feedback throughout the development of the district’s new strategic plan. During this process, over 3,000 suggestions were received on what the district should stop doing and about 6,000 suggestions were received on what the district should start doing. The district will continue to expand efforts to reach out to families and community members through the use of technology and to encourage use of technology to support student success.</td>
</tr>
<tr>
<td>1.4</td>
<td>Build the capacity of the district to use online communities and other technologies to support the induction of 100% of new teachers.</td>
<td>Measure the number of new teachers who are actually logging in and using the MPS Portal communities. Track and evaluate the support and training provided to new teachers, using the newly developed technology reporting system.</td>
<td>Execution ✔️ Planning ✔️ Analysis</td>
<td>Two programs to support teachers through online and in person professional learning communities were implemented in 2006-07, MPS Professionals Revitalizing Online (PRO), and Virtual Induction Program (VIP) for new teachers. 18 teachers were trained to facilitate these professional learning communities through use of technology tools. 2006-07 VIP/PRO Participants and Leaders - 185 2005-06 PSP Participants and Leaders - 313 2004-05 PSP Participants and Leaders – 253</td>
<td>The district will continue to expand efforts to increase use of the Portal and other enterprise systems by new teachers. Training will continue for key departments to create, manage and organize content to be included in the Portal communities that support staff development. VIP and PRO programs will continue. Evaluation data from 2006-07 will be used to improve ongoing implementation efforts.</td>
</tr>
<tr>
<td>#</td>
<td>Objective</td>
<td>Evaluation Method</td>
<td>Extent Achieved</td>
<td>Evaluation Findings (Briefly describe results)</td>
<td>Comments</td>
</tr>
<tr>
<td>----</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 1.5 | Provide varied methods of both technical and functional training and support for all MPS staff. | - Track and evaluate the support and training provided throughout the district using the online report, evaluation, and monitoring tool.  
- Professional development online evaluation results. | ✓ Execution  
☐ Planning  
☐ Analysis | **OPD Successes, 2004 - 2007**  
Spring T1 2004  126  
Spring T2 2004  103  
Summer 2004  64  
Fall 2004  126  
Spring T1 2005  137  
Spring T2 2005  254  
Summer 2005  125  
No fall session in 2005  
Spring T1 2006  145  
Spring T2 2006  99  
Spring T3 2006  107  
Summer 2006  120  
Fall 2006  154  
Spring 2007  180  
Total  1740 | The MPS Division of Technology is implementing an electronic management system to facilitate and track professional development for district employees. The data generated from the system will support data-based decision making, accountability and improved use of resources. Staff development will be enhanced and aligned to district goals and state and federal standards.  
Staff development participation tracked through the ENROLL system for 2004-05 was 935 and in 2006-07 was 953.  
During 2006-07, 2 people from 120 elementary and K-8 schools were trained on the full use of eSIS. This train the trainer model is expected to increase use of eSIS tools by teachers.  
643 teachers used eSIS grade book in 2006-07 as evidenced by assignment grades entered for students by the end of the school year. Teachers in 78 schools used eSIS grade book in 2006-07. |
<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 2.1| Publish by September 2007 technology skill sets that meet research-based standards and align with the MPS Learning Targets.                   | - Technology skill sets are identified and aligned with the MPS Learning Targets. Aligned skill sets are published for students, teachers, and parents. - Recommendations for software published.                       |Execution Planning Analysis | Technology skill sets have been drafted and will be submitted to other agencies (DPI, CESA, UWM, etc.) for feedback prior to adoption. MPS continues to make progress at attaining 100% proficiency on Grade 8 Technology Literacy as reported by schools in June of each school year the SPS system. Proficiency is based on meeting in all 6 areas of the NETS Standards for teachers.  
- 2005-06 78%  
- 2006-07 85% | After feedback is received on the technology skill sets, the final document will be published for students, teacher, and parents.  
MPS will revise the Grade 8 Technology Literacy standards during the 2007-08 school year to reflect the revised NETS Standards. Revised requirements will be implemented during the 2008-09 school year. |
| 2.2| Increase by 25% the number of students supplementing face-to-face instruction and assessment with online and other technologies towards improving student achievement, closing the achievement gap, and increasing the graduation rate by June of 2008. | - Track and report the number of students enrolled in virtual school courses, Desire2Learn, and other web-based services through enrollment reports and login data. - Use 2005-2006 data as baseline. - Guidelines for use of assistive technology tools for assessment are developed and disseminated. |Execution Planning Analysis | Since 2006, over 100 high school students have been trained in computer hardware maintenance and repair as well as software installation and trouble shooting. Trained students were allowed to take one of their restored computers home.  
In 2005-06 5 out of 22 students successfully participated in online advanced placement courses through the CESA #9 Wisconsin Virtual School. In 2006-007 9 out of 23 successfully completed courses. Courses cost $325.00.  
Two sessions with Children's Health Education Center Courses (Energy Extreme, Alcohol Tobacco & Other Related Drugs, Check UR Health) were run in March 07 & May 07 with over 1900 Students enrolled in the courses. 72 online courses were setup (mixed between EE, ATOD, Check UR Health) to support safe and drug free schools.  
Audubon Charter School ran two online courses: an ethics course required for all students and an Art & Design course for 90 students. | The district will continue to expand professional development to teachers and school leaders on using technology to supplement instruction and increase student awareness and use of online tools and resources. |
<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments (Status of implementation and/or plan adjustments)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3</td>
<td>Students will select the technology that best enables them to acquire information, communicate their knowledge and understanding of content, and solve problems.</td>
<td>- Increase in the enGauge mean score of conditions and indicator areas of Educator Proficiency and Effective Teaching, and Learning practice. By the end of 2008, enGauge results will show all areas in the Exploration range and moving toward Transformation.</td>
<td>☑ Execution ☐ Planning ☐ Analysis</td>
<td>The enGuage survey was conducted in 2003-04 of 53 MPS schools. The survey measured the effective use of educational technology and profiled information regarding how respondents prioritized both 21st century skills and the importance of technology integration in various content areas. The scale ranged from awareness, to adoption, to exploration and finally to transformation. In 2006-07 10 schools completed in the survey. The drop in participation was due to the tool moving to a fee-based assessment. Curriculum Specialists from the Division of Teaching and Learning worked with several schools to pilot various technology resources to support understanding in core content areas. The Science Under Sail Program used interactive video conferences from the ship to communicate with 54 students and 6 teachers from 8 MPS high schools on science lessons. 289 teachers from MPS 40 schools used the United Streaming tool. United Streaming provides web-based access to video clips to enhance classroom instruction. The teachers viewed 19,636 video streams and downloaded 4,100 of these to be used live or downloaded and saved for future use.</td>
<td>MPS needs to identify and/or develop an assessment tool that allow the district to measure how staff acquire information, communicate their knowledge and understanding of content, and solve problems. Curriculum Specialists from the Division of Teaching and Learning will continue to work with several schools to pilot various technology resources to support understanding in core content areas. Use of United Streaming for instructional support will continue to grow in the coming years.</td>
</tr>
</tbody>
</table>
Goal 3: Access to Information Resources and Learning Tools – Students, staff, parents, and community will have equitable access to information resources and technology learning tools to construct knowledge as self-directed, continuous learners.

<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments (Status of implementation and/or plan adjustments)</th>
</tr>
</thead>
</table>
| 3.1 | Increase the number of schools that meet the goal of a ratio of students to computers equal to 3:1 from 53% of schools that have met this goal in 2004 to 65% of schools by August of 2008. | - District minimum standards developed & disseminated to schools.  
- Questions on annual technology school survey to determine compliance with minimum standards and the goal of 3:1 ratio of computers to students.  
- Number of students utilizing distance-learning options. | ✓ Execution  
☐ Planning  
☐ Analysis | Currently the district estimates the ratio of students to computers equal to 6:1.  
In 2005-06 5 out of 22 students successfully participated in online advanced placement courses through the CESA #9 Wisconsin Virtual School. In 2006-007 9 out of 23 successfully completed courses. Courses cost $325.00. | MPS will continue to collect data on virtual school initiatives to determine the strategies with the greatest opportunity for success to replicate. |
# | Objective | Evaluation Method | Extent Achieved | Evaluation Findings (Briefly describe results) | Comments (Status of implementation and/or plan adjustments)
---|---|---|---|---|---
3.2 | Increase the capacity of the wide area network by 100% to improve availability and reliability in support of 24/7 operations by June 2008, at a 50% reduction in network operating and maintenance costs. | - Measure network performance (prior and post network upgrade) from a cross sample of locations, i.e., elementary schools, middle schools, high schools for:  - Increased Network Usage  - Reduced Network Latency  - Improved Network Response Times  - Reduction in overall maintenance costs  - Reduction in network outages, from a quantity and time perspective.  - Conduct inventory of wireless access points identified and implemented (increasing trend).  - Compliance to Service Level Agreements | ✔️ Execution Planning Analysis | The network was successfully upgraded from July 2006 to May 2007, which resulted in:  - Savings of $4.8 million over 5 years  - Increased network bandwidth at schools by 40%  - Increased network usage, more than double from 2004  - Guaranteed by ATT 99.9% packet delivery on data network  - Flexibility of increasing bandwidth per site on an as needed basis  - Added network fail-over capability by adding network fail-over between Central Services and the Technology Support Center  - Improved network fail-over capability between the two data centers  - Reduced download & upload times by 400% | The District began updating its Wide Area Network (WAN) in July of 2006. The core objectives of the network upgrade were to;  a.) Replace the aging WAN hardware that was out of manufacturer support and maintenance.  b.) To reduce hardware maintenance and network transmission service costs.  c.) To provide a more reliable network.  d.) To take advantage of newer technology that provides increased network performance. Both the WAN hardware (Cisco) and ATM/SONET network had been in place for 9 years.  

The network upgrade was completed in May of 2007. The entire core network infrastructure was replaced in both of the District’s core Data Centers. Over 550 network devices (routers and switches) were replaced in all of the schools Master Closets (MC). The ATM/SONET transport was replaced by AT&T’s Optical Ethernet Metropolitan Area Network (Opt-E-MAN). This network provides a high-speed digital Ethernet transmission to all District locations. 250 Mb links are provided to all High Schools and most Middle Schools and 50 Mb connections are provided to all elementary schools. The new network architecture provides increased reliability by eliminating shared connections.  

Included in the network upgrade was the addition of Voice Gateways that provide the transport for on-net 5 digit dialing over the WAN. This upgrade positions the District to enhance its enterprise telephone system as newer technology continues to emerge in particular Voice Over IP (VOIP). The District’s Voice Mail architecture remains the same and we are now investigating replacing the Voice Mail system to be centralized.
<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 3.3 | Increase the number of parents and community members with access to teaching, learning, and other MPS information resources.                                                                                                                                                                                                                                                                  | - Measure usage of the Parent Community section in Portal (increasing trend).  
- Parent Assistant implemented.  
- Measure usage to Parent Assistant.  
- Track and report number of schools using Parent Link.  
- Recreation Activity Registration System implemented.  
- Number of activity registrations per season (increasing trend). | | Families with Parent Assist accounts have risen from zero in 2004-05 to 1,496 in 2005-06 and 2,801 in 2006-07.  
The number of Parent Link phone messages delivered in 2006-07 was 1,533,205.  
Recreation activity registration is installed and Execution functional. In the first year of operation, the district experienced a 3% increase in Internet registrations each season for a total of 11,505 Internet registrations. Prior to the implementation, those registrations were manually processed by staff.  
Portal usage varied over the course of the 2006-07 school year as seen in the table below:  
| Portal Logins                                                                                           | 4/2006 | 1406                                                                                                                                                                                                 | **Execution** | Starting in Fall of 2007 families will be able to register for parent training using the ENROLL system increasing access to training and support services that will increase their ability to successfully support their child’s learning process.  
The District is investigating broadband wireless technologies to give under-served students and their families’ access to network resources outside of the regular school day. The District is currently piloting a wireless broadband system WiMAX on its Educational Broadband Service (EBS) channels. In addition the District has partnered with the Milwaukee Area Technical College and the University of Wisconsin-Milwaukee to lease its collective 12-channel EBS spectrum to a commercial communications vendor for development of a WiMAX wireless broadband service covering a multiple county-wide area.  
Strategies to improve portal usage by staff and community members are being developed. |
<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 3.4| Provide a secure networking and operating environment, ensuring that sensitive data and critical information resources are protected to maintain the privacy and confidentiality of student and staff records on an ongoing basis. | Execution Planning ✗  Analysis ☑️ | - Updated AUP published.  
- Number of viruses and SPAM blocked (increasing trend).  
- Number of “valid” emails distributed (increasing trend).  
- Security Audit | Progress was made in the efforts to improve the overall security profile of the District:  
- Remote network access control mechanisms have been implemented to control using Symantec Network Access Control software.  
- Increased use of SSL certificates to protect the transmission of data to/from numerous web applications  
- Improvement in the automatic deletion of inactive accounts, tied to source systems, using Directory Services  
- Increased the number of SPAM blocked by 10x  
Completed a cursory security analysis by one of our business partners to provide direction for security planning | In December of 2005 the District successfully implemented a new email system Microsoft Exchange 2003. This implementation replaced a POP3 email system. The District implemented Outlook Web access for all District students and staff thus enabling access to email from beyond the school building and school day. District students and staff now enjoy access to email from home, public libraries and from after-school-hours community centers. Email power users use Outlook 2003 thick client.  
With the increase of external threats such as Denial of Service attacks (DoS), viruses, spyware and adware the District has strengthened its network security by installing and implementing Network Access Control appliances (NAC). These NAC devices ensure adherence to District security policies by ensuring that all connections made via VPN or dial-up are secure by ensuring users have up-to-date anti-virus software and adhere to other security policies such as operating system updates.  
Due to the potential for loss or theft of District owned portable technology the District is taking steps to software encrypt hard drives on all staff laptops, PDA’s and password protection for jump/flash drives. The District is undertaking this initiative to stay in compliance with several Federal privacy legislation mandates that are included in HIPAA, CIPA and NCLB that hold the District responsible for employee and student records. Specifically those staff laptops that may be used to temporarily store staff or student data on them will be encrypted with the highest priority. Password protection software for jump drives will also be implemented at a future date. Student laptops will not be encrypted.  
The data encryption software used is Utimaco’s Safeguard Easy.
Goal 4: Support Systems and Leadership – Technology systems will support visionary leadership and educator proficiency to improve student achievement and close the achievement gap.

<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 4.1 | Evaluate procedures and standards by December 2005 to confirm that they effectively meet the needs of an ever changing and evolving technology landscape, aligned to support the improvement of student learning and staff knowledge. | - Approved menu of educational and institutional software developed and disseminated.  
- Number of schools including technology integration in their Educational Plan. | Execution/Planning/Analysis | Summer 2007, a list of 75 approved educational internet sites aligned to 10 sixth grade math learning targets and 24 sixth grade reading and writing learning targets were developed.  
School educational plans placed little emphasis on technology integration, in part due to minimal guidance to do so. | These Internet Profiles aligned to MPS Learning Targets for the sixth grade curriculum will be disseminated to teachers, parents and students in Fall of 2007. This pilot effort with sixth grade will serve as a model for future work identifying Internet Profiles for other grades.  
Tools to encourage technology integration as a strategy in school educational plans will be developed. |
| 4.2 | Improve interoperability and integration among core district business applications by 2008 for the purpose of (a) increasing information sharing opportunities; (b) improving data quality; (c) developing resource efficiencies; and (d) laying the foundation for real-time data-driven decision making. | - Measure usage of MPS Data Warehouse (increasing trend).  
- Measure usage of MPS Portal (increasing trend).  
- Number of School Interoperability Framework (SIF) compliant applications (increasing trend).  
- Questions on annual technology school survey to measure effectiveness of decision support tools.  
- Number of applications available through single sign-in on portal. | Execution/Planning/Analysis | The MPS Data Warehouse has been complete re-designed during the past 18 months. The new tables are complemented by a data dashboard and a new query tool. The formal launch of the new warehouse and associated tools is scheduled for August, 2007. Usage reports will be available with the launch, and staff use of the reports will be tracked.  
The district initiated first-ever use of quarterly benchmark assessments in Reading and Math during 2006-07. These assessments, aligned to the DPI Assessment Frameworks, are implemented in nearly 200 schools in the district. Students can take the assessments on-line or on paper. Results are available immediately for students who take assessments on-line and are returned within a week for those taking them on paper. Teachers can access reports 24/7 via a secure web-site.  
The district is pursuing funding for an Integrated Information Management System (IRIS).  
Two major data applications that are SIF compliant are the eSIS student information system and the Follett library system. | PD to support the new data warehouse and dashboard is scheduled throughout the school year, with a focus on persistently low performing schools.  
PD to support the benchmark assessments is ongoing, also with a particular focus on low performing schools.  
District is pursuing funding for an Integrated Information Management System (IRIS).  
Two major data applications that are SIF compliant are the eSIS student information system and the Follett library system. |
<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments (Status of implementation and/or plan adjustments)</th>
</tr>
</thead>
</table>
| 4.3 | Design and implement an integrated achievement and instructional management system by June 2008 that provides reliable and timely student performance data to monitor progress, inform instruction, and communicate results. | - Integrated achievement and instructional management system is developed or purchased.  
- Track and report the number of schools using the system on a regular basis. |  | Execution  
Planning  
Analysis | The district explored integrated achievement and instructional management systems used in other school districts. Several vendors shared information with district-level staff. The district determined that the data warehouse design was a higher priority and moved focus to that project. In the interim a grant application was developed that seeks funding to pursue design and development of an integrated management information system.  
Integrated Resource Information System (IRIS) collaborative grant application with the Wisconsin Center for Education Research was revised and resubmitted to the U.S. Department of Education. Award status is still pending. |
| 4.4 | Establish a centralized library automation system for all of the library media centers in the district by Fall 2008. | - Centralized library automation system is purchased and implemented.  
- Track and report the percent of schools executing implementing the new system. |  | Execution  
Planning  
Analysis | Centralized library automation system purchased in 2006-07. Centralized library automation is currently being implemented with 90% of schools operational by September 2007.  
Installation of the centralized library automation system will continue until 100% of the system is operational by September 2008. Staff development will be implemented to support use of the new library automation system. |
<table>
<thead>
<tr>
<th>#</th>
<th>Objective</th>
<th>Evaluation Method</th>
<th>Extent Achieved</th>
<th>Evaluation Findings (Briefly describe results)</th>
<th>Comments (Status of implementation and/or plan adjustments)</th>
</tr>
</thead>
</table>
| 4.5| Increase the capacity of staff to demonstrate leadership in the understanding and application of technology and to use it to achieve personal and professional goals. | - Survey and report annually on staff response to enGauge online survey showing growth on the skill continuum from baseline in fall of 2005 towards transformation.  
- Implementation of online professional growth reporting system; data from this system used for evaluation. | Execution  
Planning  
Analysis | According to the 2006-07 Climate Survey (staff respondents n=6,564), 89.9% of staff responding report having a computer at home. 88.4% of staff responding report having internet access. 18.9% report their ability to use technologies such as computers, Internet, email, software programs, PDAs, and calculators as advanced user, 63.5% as comfortable use, 14.9% as beginner user and 1.9 as non-user. Respondents reported extent of technology use in school to meet differing student needs of all students as 13.1% advanced use, 47.5 consistent use, 28.6 limited use, 1.5% no use, 8.3% reported not knowing, and .9% did not respond. Use of technology tools for collaboration and communication between home and school was reported at 13.8% advanced use, 37.4% consistent use, 32.7% limited use, 5.1% no use, 10.2% don't know, and .8% had no response.  
According to the 2006 Instructional Practices Survey, in planning lessons this year, 31.56% of respondents reported relying in Internet resources a great deal, 50.15% some, 15.53% a little, 2.76% not all at the elementary level; middle school teachers reported relying in Internet resources 42.79% a great deal, 46.28% some, 9.71% a little, and 1.21 not at all. High school teachers reported relying in Internet resources 43.73% a great deal, 46.53% some, 8.09% a little, and 1.65% not at all. Elementary teachers reported receiving professional development or other training in the use of computers and other technology instruction 14.16% a great deal, 35.92% some, 22.66% a little, and 27.26% not at all. Middle grade teachers reported receiving professional development or other training in the use of computers and other technology instruction 22.71% a great deal, 35.49% some, 23.31% a little and 18.5% not at all. High school teachers reported receiving professional development or other training in the use of computers and other technology instruction 24.39% a great deal, 32.08% some, 21.28% a little, and 22.26% not at all. | |
Information and Technology Strategic Plan for Milwaukee

October 2007

Submitted by:

Milwaukee Public Schools

For years: July 1, 2008 through June 30, 2011

William G. Andrekopoulos, Superintendent of Schools

Michelle Nate, Chief Finance and Operations Officer

Contact Persons:

James Davis, Director of Technology
davisj@milwaukee.k12.wi.us
414-475-8171

Milwaukee Board of School Directors

Peter Blewett, President, District #6
Tim Petersons, District #1
Charlene Hardin, District #4
Danny Goldberg, District #7
Bruce Thompson, At-Large

Jeff Spence, Vice President, District #2
Michael Bonds, District #3
Jennifer Morales, District #5
Terry Falk, District #8

Submitted to the Milwaukee Board of School Directors for approval.
**Table of Contents**

1.0 **Introduction** .......................................................................................................................................166

2.0 **Division of Technology Organizational Chart** ..................................................................................167

3.0 **Budget Summary** ..............................................................................................................................169

   4.0 **Infrastructure** ...............................................................................................................................174

      4.01: Technical Infrastructure for the District Networking – WAN ..................................................174

      4.02: Technical Infrastructure for the District Networking – LAN ..................................................176

      4.03: Internet Availability – Infrastructure ..........................................................................................178

      4.04: Telecommunications (Telephony) ..............................................................................................180

      4.05: Wireless Communication .........................................................................................................181

      4.06: Broadcast Services – ESCC & ITFS .........................................................................................183

      4.07: Information & Network Security ..............................................................................................185

4.0 **System Software & Support** ............................................................................................................187

   5.01: School Based Hardware ..................................................................................................................187

   5.02: Network Operating System Architecture ......................................................................................189

   5.03: Information Systems Monitoring ..................................................................................................190

   5.04: Enterprise Backup & Recovery ....................................................................................................192

   5.05: School Based Technology Coordinator Support ...........................................................................194

   5.06: Technology Support Center (7 x 16) ...........................................................................................196

   5.07: Interactive Video Network ...........................................................................................................197

   5.08: Computer Maintenance and Repair ............................................................................................199

5.0 **Application Development** ...............................................................................................................202

   6.01: Data Warehouse, Integrated Resource Information System (IRIS) and Geographic Information
   System (GIS) ...........................................................................................................................................202

   6.02: Student Records Management System (eSIS) ............................................................................204

   6.03: PeopleSoft Human Resources System .........................................................................................206

   6.04: Electronic Communication and Portal ..........................................................................................207

   6.05: Financial Information System (IFAS) ...........................................................................................209

   6.06: Student Records Management System for Special Services .....................................................210

   6.07: Facilities and Maintenance Information System ...........................................................................211

   6.08: Web Development .......................................................................................................................212

6.0 **Other** ..............................................................................................................................................213

   7.01: Disposal of Obsolete Technology ...............................................................................................213

   7.02: Interactive Voice Response (IVR) ...............................................................................................215

   7.03: WYMS (FM) Radio Station .........................................................................................................216

APPENDIX A: **MPS Wide Area Network** .................................................................................................217

APPENDIX B: **MPS Local Area Network (Schools)** ..............................................................................218

APPENDIX C: **Chronological Time Line – MPS Infrastructure** ...............................................................219

APPENDIX D: **Schools Purchasing TC Buyback Services (07/08)** .........................................................221

APPENDIX E: **Educational Broadcast System WiMAX Network** .............................................................222
1.0 Introduction

The Division of Technology is responsible for providing strategic technology leadership for the district and designing and maintaining the district’s technical infrastructure and all enterprise mission critical applications. This includes all voice, video and data services, along with the district’s radio station (WYMS 88.9) and the IP Television Network.

The district is the 29th largest urban school district in the country. The vast majority of the school buildings are over 50 years old. However, notwithstanding this, all classrooms are wired with fiber. Each classroom has one or more switches to facilitate the disbursement of bandwidth to desktops, telephones and other technology in each room.

Milwaukee Public Schools is one of the few school districts with a student enrollment of over 90,000 that has fiber connections to each of its 4,407 classrooms, a minimum of 25 MB bandwidth to each building, and 1 GB in its core infrastructure. The robust classroom connectivity is assured since most classrooms have 100MB switches supporting voice, video and data. The capacity exists to support desktops with speeds up to 1GB.

The district was an early adopter of integrating technology into the curriculum. Supporting this initiative is an inventory of over 30,000 desktops with Internet connectivity and interactive video capabilities to every school. This provides for a 3:1 ratio of students to desktops in the district. Schools have a wealth of instructional software that is specific to the various grades and subjects. Over 100 of the district’s schools have video capability in every classroom.

While there is significant bandwidth in each of the schools, the district has designed and implemented one stage of a pre-WiMax network. From antennas located on the Central Services building, wireless broadband (802.16) is provided to distances up to a four (4) mile radius. A large test team has been using this system since February 2007 as their broadband service with exceptional results. It is estimated that an additional 10-14 towers will need to be constructed in order to provide city wide broadband wireless access to MPS students. Such a city-wide wireless network (WiMAX) will assure ubiquitous access of technology to the entire MPS community. This new wireless infrastructure will extend the network beyond the building walls, and provide Internet access to all students at home, without the need for broadband service such as DSL or Cable. The wireless network in the schools will support digital books of the future and students who will require continuous connectivity as they move from classroom to classroom. The district is currently working with one of the top five national communications companies to build out the remaining WiMax network by leasing the district’s licensed spectrum. The district will use the lease fees paid by the vendor to obtain the broadband services free for students.

While the district will continue to maintain and upgrade the technical infrastructure, its primary focus will be the effective integration of technology into the curriculum. Milwaukee Public Schools will continue to enhance education with technology, providing the best quality instruction in a digital society and preparing staff and students to be self-directed learners and successful contributors to their community.
3.0 Budget Summary

The Division of Technology has the responsibility to develop, implement and maintain enterprise applications for the Milwaukee Public Schools. This includes the district’s Enterprise Wide Area Network (EWAN), which supports all voice, video and data communications traffic. In addition, the division maintains the district’s two core data centers which house servers and telecommunications equipment that support all mission critical applications. The division staff of 84 employees (see organization chart on preceding page) is augmented with several full-time technical contractors and consultants.

The district’s local budget for the Division of Technology is approximately twelve million dollars annually. These funds are used to maintain all of the district’s mission critical applications such as student information management, financials, human resources, data warehouse, student transportation and others. The district must use local funds to pay its portion of services and products approved under the E-Rate program.

Each year, the district's local funds are supplemented by an additional seven to eight million dollars in E-Rate funds. These E-Rate funds are used to defray eighty-four percent of the recurring service fees for Wide Area Network (WAN) services and maintenance, Internet access and telephone services. E-Rate has also funded purchases of servers, network switches, and routers.

Most of the district’s professional development initiatives and procurement of instructional software are paid for with funds received in various grants. District wide professional development that specifically addresses integration of technology is funded with Title IID grant dollars. Local school funds are used to procure hardware such as desktops, laptops, data projectors, and handheld devices, as well as finance embedded local professional development.

The budget worksheet that follows provides a summary of funding sources used to support professional development, learning tools, educational software, computing hardware, information resources, infrastructure, and connectivity. All funding levels are projections for the next three years.

Funding for these initiatives will be an essential component in the district's plan to make information literacy and technology integral elements of a 21st century education.
### MPS Instructional Media & Technology Budget Work Sheet

<table>
<thead>
<tr>
<th>Funding Area &amp; Year</th>
<th>Professional Development</th>
<th>Learning Tools (Hardware, AV Equipment, etc…)</th>
<th>Information Resources (Print, Electronic and Online Subscriptions/Resources, Software, Multimedia)</th>
<th>Infrastructure and Connectivity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local District Budget</strong></td>
<td></td>
<td></td>
<td></td>
<td>$3,000,000</td>
</tr>
<tr>
<td><strong>E-Rate</strong></td>
<td></td>
<td></td>
<td></td>
<td>$4,713,840</td>
</tr>
<tr>
<td><strong>NCLB Programs</strong></td>
<td></td>
<td></td>
<td></td>
<td>$9,400,000</td>
</tr>
<tr>
<td><strong>Title I</strong></td>
<td>$9,400,000</td>
<td>$9,400,000</td>
<td>$9,400,000</td>
<td></td>
</tr>
<tr>
<td><strong>Title II, Part A: Ed Train</strong></td>
<td>$2,300,000</td>
<td>$2,300,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Title II, Part B: Math/Sci</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Title II, Part D: Ed Tech</strong></td>
<td>$1,100,000</td>
<td>$833,000</td>
<td>$840,000</td>
<td></td>
</tr>
<tr>
<td><strong>Title III</strong></td>
<td>$108,000</td>
<td>$191,000</td>
<td>$190,000</td>
<td></td>
</tr>
<tr>
<td><strong>Title IV</strong></td>
<td>$33,000</td>
<td>$29,000</td>
<td>$30,000</td>
<td></td>
</tr>
<tr>
<td><strong>Title V</strong></td>
<td>$700,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Title VI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>State of WI Programs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Common School Fund</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Telecom Access Subsidy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Microsoft Settlement</strong></td>
<td>$10,641,000</td>
<td>$12,753,000</td>
<td>$12,760,000</td>
<td>$3,000,000</td>
</tr>
</tbody>
</table>

**TOTAL** ($102,289,300)

All funding levels are projections
### TABLE B: Budget Summary For FY 2008-09 & District Support of E-Rate Services

<table>
<thead>
<tr>
<th>Technology Category</th>
<th>Estimated E-Rate Application Request Total(^1)</th>
<th>Estimated E-Rate Discounted Funds Received(^1)</th>
<th>Estimated E-Rate Local Funds Allocation(^1,2)</th>
<th>Additional Local Funds Allocated To Support Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Personal computers</td>
<td></td>
<td></td>
<td></td>
<td>$3,000,000</td>
</tr>
<tr>
<td>Software</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- TDD System</td>
<td>60,000</td>
<td>48,000</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td>- Educational Software</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Leased Digital Transmission Service</td>
<td>$2,412,000</td>
<td>$1,929,600</td>
<td>$482,400</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>- Cisco SMARTnet Maintenance Service</td>
<td>120,000</td>
<td>96,000</td>
<td>24,000</td>
<td></td>
</tr>
<tr>
<td>- ISDN Primes &amp; DS-1 Service</td>
<td>1,374,000</td>
<td>1,099,200</td>
<td>274,800</td>
<td></td>
</tr>
<tr>
<td>- Internet Service Provider</td>
<td>181,000</td>
<td>144,800</td>
<td>36,200</td>
<td></td>
</tr>
<tr>
<td>- Local Telephone Service (POTS)</td>
<td>1,591,500</td>
<td>1,273,200</td>
<td>318,300</td>
<td></td>
</tr>
<tr>
<td>- PBX Maintenance</td>
<td>141,600</td>
<td>113,280</td>
<td>28,320</td>
<td></td>
</tr>
<tr>
<td>- Long Distance Service</td>
<td>12,200</td>
<td>9,760</td>
<td>2,440</td>
<td></td>
</tr>
<tr>
<td>Professional Development</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$3,500,000(^3)</td>
</tr>
<tr>
<td>Staffing</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$5,000,000</td>
</tr>
</tbody>
</table>

\(^1\) [Estimated E-Rate Application Request Total] = [Estimated E-Rate Discounted Funds Received] + [Estimated E-Rate Local Funds Allocation]

\(^2\) Local funds that have to be included as part of the District budget and Board approved.

\(^3\) Professional Development funds include Title II–D and E2-T2 competitive grants, estimated to be $1,300,000.
### TABLE C: Budget Summary For FY 2009-10 & District Support of E-Rate Services

<table>
<thead>
<tr>
<th>Technology Category</th>
<th>Estimated E-Rate Application Request Total&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Estimated E-Rate Discounted Funds Received&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Estimated E-Rate Local Funds Allocation&lt;sup&gt;1,2&lt;/sup&gt;</th>
<th>Additional Local Funds Allocated To Support Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardware</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Personal computers</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$25,000,000</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- TDD System</td>
<td>60,000</td>
<td>48,000</td>
<td>12,000</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>- Educational Software</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Operations &amp; Maintenance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Leased Digital Transmission Service</td>
<td>$2,412,000</td>
<td>$1,929,600</td>
<td>$ 482,400</td>
<td></td>
</tr>
<tr>
<td>- Cisco SMARTnet Maintenance Service</td>
<td>120,000</td>
<td>96,000</td>
<td>24,000</td>
<td></td>
</tr>
<tr>
<td>- ISDN Primes &amp; DS-1 Service</td>
<td>1,374,000</td>
<td>1,099,200</td>
<td>274,800</td>
<td></td>
</tr>
<tr>
<td>- Internet Service Provider</td>
<td>181,000</td>
<td>144,800</td>
<td>36,200</td>
<td></td>
</tr>
<tr>
<td>- Local Telephone Service (POTS)</td>
<td>1,591,500</td>
<td>1,273,200</td>
<td>318,300</td>
<td></td>
</tr>
<tr>
<td>- PBX Maintenance</td>
<td>141,600</td>
<td>113,280</td>
<td>28,320</td>
<td></td>
</tr>
<tr>
<td>- Long Distance Service</td>
<td>12,200</td>
<td>9,760</td>
<td>2,440</td>
<td></td>
</tr>
<tr>
<td><strong>Professional Development</strong></td>
<td></td>
<td></td>
<td></td>
<td>$3,500,000&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Staffing</strong></td>
<td></td>
<td></td>
<td></td>
<td>$5,000,000</td>
</tr>
</tbody>
</table>

| Total                     | $5,892,300                                              | $4,713,840                                           | $1,178,460                                       |                                                       |

<sup>1</sup> [Estimated E-Rate Application Request Total] = [Estimated E-Rate Discounted Funds Received] + [Estimated E-Rate Local Funds Allocation]  
<sup>2</sup> Local funds that have to be included as part of the District budget and Board approved.  
<sup>3</sup> Professional Development funds include Title II–D and E2-T2 competitive grants, estimated to be $1,000,000.
### TABLE D: Budget Summary For FY 2010-11 & District Support of E-Rate Services

<table>
<thead>
<tr>
<th>Technology Category</th>
<th>Estimated E-Rate Application Request Total</th>
<th>Estimated E-Rate Discounted Funds Received</th>
<th>Estimated E-Rate Local Funds Allocation</th>
<th>Additional Local Funds Allocated To Support Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- PBX Equipment</td>
<td>$2,000,000</td>
<td>$1,600,000</td>
<td>$400,000</td>
<td></td>
</tr>
<tr>
<td>- Storage (E-Mail)</td>
<td>400,000</td>
<td>320,000</td>
<td>80,000</td>
<td></td>
</tr>
<tr>
<td>- Personal computers</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Software</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- PBX (Licenses)</td>
<td>$500,000</td>
<td>$400,000</td>
<td>100,000</td>
<td></td>
</tr>
<tr>
<td>- E-Mail System Software (Licenses)</td>
<td>400,000</td>
<td>320,000</td>
<td>80,000</td>
<td></td>
</tr>
<tr>
<td>- TDD System</td>
<td>60,000</td>
<td>48,000</td>
<td>12,000</td>
<td></td>
</tr>
<tr>
<td>- Educational Software</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td></td>
<td></td>
<td></td>
<td>$2,000,000</td>
</tr>
<tr>
<td>- Leased Digital Transmission Service</td>
<td>$2,412,000</td>
<td>$1,929,600</td>
<td>$482,400</td>
<td></td>
</tr>
<tr>
<td>- Cisco SMARTnet Maintenance Service</td>
<td>120,000</td>
<td>96,000</td>
<td>24,000</td>
<td></td>
</tr>
<tr>
<td>- ISDN Primes &amp; DS-1 Service</td>
<td>1,374,000</td>
<td>1,099,200</td>
<td>274,800</td>
<td></td>
</tr>
<tr>
<td>- Internet Service Provider</td>
<td>181,000</td>
<td>144,800</td>
<td>36,200</td>
<td></td>
</tr>
<tr>
<td>- Local Telephone Service (POTS)</td>
<td>1,591,500</td>
<td>1,273,200</td>
<td>318,300</td>
<td></td>
</tr>
<tr>
<td>- Long Distance Service</td>
<td>12,200</td>
<td>9,760</td>
<td>2,440</td>
<td></td>
</tr>
<tr>
<td>Professional Development</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$3,500,000</td>
</tr>
<tr>
<td>Staffing</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$5,000,000</td>
</tr>
</tbody>
</table>

**Total:**

- $9,050,700
- $7,240,560
- $1,810,140

---

1. [Estimated E-Rate Application Request Total] = [Estimated E-Rate Discounted Funds Received] + [Estimated E-Rate Local Funds Allocation]
2. Local funds that have to be included as part of the District budget and Board approved.
3. Professional Development funds include Title II–D and E2-T2 competitive grants, estimated to be $1,000,000.
4.0 Infrastructure

4.01: Technical Infrastructure for the District Networking – WAN

Goal:
To increase performance, reliability and availability of Wide Area Network resources from every classroom in the district in order to support teaching and learning goals.

Primary Responsibility:
Division of Technology

Target Audience:
Students & Staff

Background:
Since 1997 the district had been using an ATM/SONET network infrastructure throughout its 160 school buildings. This network has provided the district with high speed, secure access to the district intranet, Internet, email, and access to mission critical district software packages both educational and administrative. In 2006 the District started installation of AT&T’s Opt-E-MAN Metro Ethernet Network to replace the ATM/SONET. The Opt-E-MAN supplies the same functionality as the ATM network did but with direct connections to both core sites providing increased speeds and reliability. The conversion to the Opt-E-MAN network was completed in May of 2007. Refer to Appendix C for a Chronological Time-Line of the MPS infrastructure.

Current Status:
The district has now implemented AT&T’s Opt-E-MAN network all of its 160 schools with 4 schools connected via point-to-point T1 connections. Refer to Appendix A for the MPS WAN diagram. 4400 of MPS classrooms have been wired to MPS standards thus enabling network access from every classroom, Lab or library. This includes the installation of telephones in each classroom. The district has approximately 10,000 telephones and an additional 300 TTY (TextNet) telephones for the hearing impaired. The district has completed the installation of switches, replacing hubs, in classrooms providing 100 MB connections to the desktop.

MPS has completed design and installation of its new WAN technology. The current Metro GIGABIT Ethernet Technology, will provide adequate bandwidth for today’s bandwidth intensive applications, uses hardware that requires lower power consumption, fewer BTUs for air conditioning, lower annual hardware maintenance costs and scalability for future growth.

E-Rate funds will be used to defray the recurring service fees for Leased Digital Transmission Service and Cisco SMARTnet Maintenance Service on eligible internetworking devices.

Future Vision:
With a GIGABIT Ethernet topology, MPS has built a more reliable network, having each location connected directly to the network backbone, in effect, reducing any dependencies and single points of failure in the network that may exist today. For example, (1) with the old network topology, equipment failures at any of the 23 backbone sites, could have resulted in an outage of anywhere between 5 to 10 schools; (2) with the new network topology, equipment failures will only affect one location.

The newer GIGABIT technology will provide MPS with additional tools for network monitoring, network isolation (in the event of virus or worm attacks), and ease of equipment support. In addition, reduces total cost of ownership and provides MPS with a greater return on investment (ROI).
### 4.01: Technical Infrastructure for the District Networking – WAN

(continued)

The district will continue to upgrade and enhance its telephone network. As new instruments are installed in new schools, the district will use VOIP.

**District Benefits:**
- Increase Network Bandwidth
- Reduce Network Latency and Response Times
- Increased Network Reliability
- Reduce Hardware Maintenance Costs
- Replace Legacy Hardware

**Evaluation:**
- Measure network performance (prior to and post network upgrades) for:
  - Increased Network Usage
  - Reduced Network Latency
  - Improved Network Response Times from a sampling of MPS locations (i.e., elementary schools, middle schools, high schools).
  - Reduction in overall network maintenance costs.
4.02: Technical Infrastructure for the District Networking – LAN

Goal:
To increase performance, reliability and availability of Local Area Network resources from every classroom in the district in order to support teaching and learning goals.

Primary Responsibility:
Division of Technology

Target Audience:
Students & Staff

Background:
The district’s school internal network consists of a core switch that supports a WAN connection to the core site and all fiber connections to the classrooms. The core switch also supports all schools servers, the district enterprise server, video surveillance, and building controls.

Current Status:
The district’s current school internal network consists of a core set of switches and a router that support a WAN connection to the core site and all fiber connections to the classrooms. The core switches also support all school servers, the district enterprise server, video conferencing, video surveillance, and building controls with Gigabit connections. This system, just installed in the 2006/2007 school year, has replaced an aging system installed in 1999/2000 that was utilizing ATM/Sonet and Ethernet connections. 363 new switches and 142 routers were installed in 142 school buildings during this upgrade.

This newer technology will provide greater bandwidth for more robust applications, increased video and IP telephony traffic, and flexibility for implementing better security standards. It will also allow each individual school to become its own entity on the backbone infrastructure rather than being dependent on an upstream node. If a failure would occur only a single site would be affected rather than up to 10 schools in the current design.

All desktop connections have been upgraded to 100 MB. Newer switching technology replaced the old legacy internal network that consisted of 10 MB hub technologies. Switching technology provides greater remote monitoring capabilities to the desktop connection as well as remote support, and reduced maintenance costs. Switching technology also provides the ability to distribute video conferencing and IP telephony to each of the classrooms. All classroom switches connect to the core switch via 100 MB fiber. Refer to Appendix B for a MPS School LAN Diagram.

There is also on going investigation to implement more wireless technology in schools to supplement the existing wired infrastructure. Wireless would provide students and staff the ability to connect to services in most locations of a building rather than being tied to a specific room. It would also help reduce the number of computers in any one school by allowing mobile carts to be moved between locations where they are needed rather than having standalone computers sitting unused in classrooms except for when a class is in session.
4.01: Technical Infrastructure for the District Networking – LAN 
(continued)

Future Vision:
With newer switching and wireless technology MPS will be able to provide schools with:
- Greater flexibility in creating network designs.
- Increased bandwidth for applications of tomorrow.
- Ability to implement tighter security in the network.

Evaluation:
- Fewer points of failure in the network.
- Improved monitoring and failure symptom analysis.
- Reduced costs in computer population for classes
4.03: Internet Availability – Infrastructure

Goal:
To increase performance, reliability and availability of enterprise resources from every classroom in the district in order to support teaching and learning goals.

Primary Responsibility:
Division of Technology

Target Audience:
Students & Staff

Background:
In 1996, the Department of Technology had the foresight of introducing the Internet to the district albeit with a very basic infrastructure, consisting of an Internet Service Provider (ISP) connection and a router connected to the MPS Network. Security, performance, reliability and availability at that point in time were not a concern. As the Internet became a critical teaching tool for teachers, a learning platform for students and a business tool for the district, the importance of this new technology became obvious, and the Internet infrastructure changed. As a result, the introduction of Firewall technologies, content-filtering software, electronic mail and Web Sites in 1997/1998 to the core Internet Infrastructure.

This core Internet Infrastructure needs to be constantly re-evaluated, modified and updated to meet current demands, requirements and shifts in technology.

The Department of Technology upgraded the circuit to the Internet (i.e., ISP) for the main data center located at Central Services in January 2000. A second redundant circuit to the Internet was implemented at the secondary data center located at the Technology Center in June 2002 to improve performance and availability. Multiple Proxy Servers have been deployed, split between the Technology Center and Central Services.

Current Status:
Web Filtering Software
The Itech web filter software has been in use at MPS for 10 years. It uses a commercial sitelist of 500,000 bad sites that is maintained and updated daily by Itech. It supports content checking of search arguments, form data and return content. It supports content labels. It also scans URLs and form content for embedded badsites. Its primary goal is to satisfy MPS's legal obligation to block inappropriate content for children and child pornography for all users. In addition, it is used to block content that is deemed as time wasting or bandwidth wasting. MPS has full control of what is blocked and what isn't via local configuration and overrides. The filter currently runs on two servers, one at Central Services and one at TSC. Daily proxy traffic to the Internet exceeds 20 million hits.

To provide a secure method for accessing internal MPS resources from the Internet (external-to-internal), VPN technology (i.e., Cisco Concentrators) was implemented in 2002. Secure VPN access for staff and outside contractors has replaced a large number of firewall rules previously necessary to provide similar outside access to select internal resources.
4.03: Internet Availability – Infrastructure (continued)

WiMax
MPS has made a commitment to provide laptop computers and Internet resources to students. To this end, MPS undertook a pilot project to provide WiMax broadband to students homes. In 2006-2007, a NextNet (Motorola) Expedience cell site was installed on the radio tower at Central Services. A successful pilot project was carried out with twenty users living within a mile of Central Services. The next step is the use of this system by students which is waiting for the availability of PCMCIA Experdience/WiMax cards. Meanwhile MPS will work with Clearwire to provide WiMax coverage of the entire school district. This ties in with Clearwire's leasing of MPS's ITFS channels and their commitment to build out a WiMax network in the Milwaukee metro area.

Dial-Up
In August 2006, a separate Internet connection was installed exclusively for dial-up traffic. All dial-up Internet traffic uses this path. This satisfies ERATE restrictions on the usage of the district's two primary Internet connections which are largely funded by ERATE. In 2007, a Symantec SNAC server was installed which will guarantee that dial-up user machines comply with MPS anti-virus standards. This will reduce the risk to the rest of the network from an infected dial-up machine. The modem bank has been reduced to 94 modems with current maximum usage of 50. This may increase with the addition of dial-up users from the student laptop initiative. The modem bank and bandwidth will be monitored and adjusted for changes in usage.

E-Mail
In December 2005, MPS cutover to the new messaging system, Microsoft Exchange 2003, planned for 2 TB of usable storage space. Usage requirements have increased, as well as the population of users using e-mail, where e-mail storage capacity will most likely need to be increased in the near immediate future.

E-Rate funds will be used to defray the recurring fees for Internet service (i.e., Internet Service Providers).

Future Vision:
With the increased dependence of the Internet and Internet-base technologies (i.e., e-mail, www), MPS will constantly be looking to improve the core Internet infrastructure to meet current demands. Some improvement areas and/or cost reduction measures MPS will be exploring, include but are not limited to:

- On going/future issues include keeping current with changing issues on the Internet. In the past year, two emerging issues have been proxy bypass sites and social sites. The filter has been enhanced to identify proxy forms that contain badsite urls. In addition new badsite categories have been created for proxy sites and for social sites. Additional changes to deal with proxy sites will be made in the coming year.
- A second issue is to monitor and adapt to increasing Internet traffic. MPS Internet web hits increased by 33% and Internet traffic as a whole increased by 100% in the 2006-2007 school year. It is important to monitor the ongoing traffic to maintain adequate capacity adding additional servers if necessary. It is also important to monitor the nature of Internet traffic for potential abuses. An ongoing objective of the filter is improved performance and improved ability to distribute the work load.
- A third issue calls for the integration of the internet servers with MPS's enterprise directory infrastructure. The filter's proprietary user database will be migrated to use MPS's LDAP servers. The filter's authorization server will be restructured to interface with LDAP.
- Increase usage of VPN technology to provide secure remote access to internal district resources. Ongoing.
- Consider an upgrade of the e-mail system in 2010/2011 with increased storage capacity.
- Consider purchasing a commercial e-mail archival solution.

Evaluation:
- Completion of Dial-In, VPN and Proxy LDAP integration.
- Measure Internet availability during core business hours (7:30 AM to 5:00 PM) for up to 99.5% uptime.
**4.04: Telecommunications (Telephony)**

**Goal:**
To maintain support and maintenance for the telephone switching systems (i.e. Private Branch Exchange (PBX)).

**Primary Responsibility:**
Division of Technology

**Target Audience:**
All School District Personnel

**Background:**
In 1998 the district began a district wide replacement of its existing telephone systems. Today, 173 MPS sites have a MITEL PBX (SX2000) that provides voice services to each of the districts school buildings. The district backbone sites provide Voice Mail services to each of its edge sites through a Baypoint Innovations Model 120S Voicemail system.

Toll services are provided to the District through the Central Service site main PX over T-1 channels connected to the Public Switched Telephone Network (PSTN). The PBX at each district site is equipped with a Primary Rate Interface (PRI) for local calls through the public switched network. Each site’s PBX also has a T-1 connected to the local network’s router to provide an alternate route dialed connection to Central Services. The Cisco 2811/3845 router at each site additionally provides all “on net” calls utilizing the Opt-E-MAN network as the transport medium.

**Current Status:**
The PBX phone systems provide effective telephone services at each MPS school site. District PBX’s are beginning to become end of life and costly to repair. In addition, the District’s Centigram voicemail system is end of life and out of manufacturer support. The district currently maintains a support contract to maintain all of its 173 PBX’s. In addition, the district has begun installing or enhancing existing PBX’s with Voice Over Internet Protocol (VOIP) systems. This is done whenever a new school addition requires additional telephone instruments above and beyond what the current switch can handle. A new VOIP system is also installed when new schools are built. The district currently has 5 VOIP systems installed. The districts Plain Old Telephone Service (POTS) is provided through the districts telecom service provider at each MPS site.

E-Rate funds will be used to defray the recurring service fees for Local Telephone Service (POTS), PBX Maintenance, Long Distance Service and ISDN Primes & DS-1 Service.

**Future Vision:**
- Identify and replace only necessary PBX switches (e.g., end of life switches) required ensuring the availability of critical telephone services.
- Upgrade all PBX operating system software and provide an effective back-up solution.
- Replace Voicemail System
- Enhance telephony services for the hearing impaired.
- Provide telephony options for administrative sites (e.g., ACD, call recording option, pre-recorded announcements district-wide)
- Allow traffic reporting
- E911 Services

**Evaluation:**
- Timely and effective telephone service and support
- Implementation of VOIP as needed.
- Full implementation of TDD services at all MPS Schools.
4.05: Wireless Communication

Goal:
To provide cost effective controlled communications to extend the district network.

Primary Responsibility:
Division of Technology

Target Audience:
Entire District

Background:
Wireless technologies have been in MPS for a number of years but they are quickly moving from infancy to maturity. The benefits of wireless connectivity are immense and obvious: flexibility, convenience, portability, increased productivity, low cost and ease of implementation. Given the cost and difficulties involved in pulling wires and upgrading the infrastructure in older buildings, many schools have embraced the chance to add a wireless component. The fact that these capabilities can be added onto an existing network, rather than requiring the old infrastructure to be replaced, holds great appeal for cost-conscious schools. In addition, one of the trends of wireless technology in K-12 environments is portable labs, also known as computers-on-wheels (COWs). Wireless labs extend the reach of a wired network, allowing classrooms to share and easily transport valuable equipment. The Federal Communications Commission (FCC) recent changes to the Educational Broadband Service (EBS) spectrum now allows digital communications services on our four-channel previously analog-only Instructional Television Fixed Service system. These changes will allow MPS the opportunity to offer MPS student households affordable wireless communications services, thereby addressing the “digital inclusion” of last mile connectivity in urban school districts.

MPS acknowledges these benefits and embraces the use of wireless technologies; however, MPS also understands that without proper security measures deployed, it can become an Achilles heel.

Current Status:
MPS has recognized the proliferation and importance of wireless technology to the district. As a result, MPS conducted a detailed analysis of the current and future state of wireless technology, from an integration, bandwidth and security perspective, to better understand the immediate and strategic direction MPS should plan for.

From this process, MPS decided the following multi-tiered security design approach would be the most effective and less user invasive:

- Require Wireless Access Points to authenticate to the network (seamlessly)
- Require Wireless Clients to authenticate to the network (seamlessly)
- Place additional controls at the data centers (Central Services and Technology Center), assuming that all users are “untrusted”
- Implement encryption technologies (i.e., SSL) for critical district resources (i.e., eSIS, PeopleSoft)
4.05: Wireless Communication (continued)

MPS is currently developing and piloting the wireless security infrastructure. MPS wireless standards have been defined and communicated to the school technology coordinators.

Future Vision:
Wireless technology will become an extension of the district network to provide increased availability of enterprise resources and services to both student and staff. In addition, networks will be built using WiMax technology in order to allow more complete wireless coverage on school grounds and to provide broadband wireless services to the MPS community (Appendix F).

- Year 1: Establish, communicate and enforce a MPS Wireless Policy. Design and implement WiFi system in one or more high schools. Work with commercial vendor in the design and build-out of initial WiMAX community broadband services.
- Year 2: Implement WiFi systems in additional high schools. Continue vendor collaboration efforts for installation phase of community WiMax systems.
- Year 3: Complete wireless system installations at remaining MPS HS’s. Completion of installation of MPS community WiMax systems.

Evaluation:
- Reduction in rouge uncontrolled wireless networks being implemented in the district, determined through random wireless audits (internal or external).
- Increased utilization of wireless networks at schools, as a method of improving and increasing the availability of MPS resources to students and staff.
- Improved communication services to MPS students, parents, teachers, staff, and community organizations through wireless broadband services.
4.06: Broadcast Services – ESCC & ITFS
Elementary & Secondary Cable Consortium & Educational Broadband Services

Goal:
To maximize the use of the EBS cable TV systems to enhance teaching and learning

Primary Responsibility:
Division of Technology

Target Audience:
Entire District

Background:
The Elementary and Secondary Cable Consortium (ESCC), located on Warner Cable 13, is a dedicated provider of educational television. During the course of the year, the Educational Access Channel transmits educational programming as outreach to schools and the community. The MPS-Educational Broadband Service (EBS) is a new digital wireless service currently in development. The EBS service will allow digital wireless communications such as internet access, VOIP, and distance learning video conferencing, to the same MPS community previously served by the ITFS system.

Current Status:
Individual schools may broadcast school events, communicate curricular goals, and share educational goals and philosophy with their community. Full television coverage of the Milwaukee Public School Board meeting is broadcast live and rebroadcast each month. Students from the MPS TV broadcast specialty programs are given hands-on experience as they learn to work a TV production during these monthly school board meeting broadcasts. Other programming of interest includes updates and town hall meetings from Federal and state agencies. The ESCC supplements programming with satellite feeds such as Annenberg K12 and Deutsche Welle. Recent changes by the Federal Communications Commission have allowed digitization of the ITFS spectrum, now called the Educational Broadband Services (EBS). MPS has chosen not to continue one-way television broadcasts in the new EBS service. MPS plans to deliver internet access, VOIP, and interactive two-way video conferencing using the EBS spectrum. MPS is currently testing a pilot WiMAX-type wireless broadband system on our EBS channels. MPS has also partnered with the Milwaukee Area Technical College and the University of Wisconsin-Milwaukee to lease our collective 12-channel EBS spectrum to a commercial communications vendor for development of a WiMAX wireless broadband service covering a multiple county-wide area. In addition, MPS also plans to incorporate an IPTV type system within our WLAN to provide additional video communications to MPS teachers, staff, and students.

Future Vision:
Creation of a digital multicast system within the MPS EBS spectrum can provide a new horizon of educational services for students, staff, parents, and the community.

- Year 1: Perform studies and testing of pilot WiMAX-type wireless broadband system. Work with commercial vendor in initial build-out of large scale WiMAX wireless network. Study IPTV systems and implementation to our network.
- Year 2: Implement second phase of WiMax network. Implement IPTV network.
- Year 3: Continue implementation of of WiMax community network.
4.06: Broadcast Services – ESCC & ITFS (continued)
Elementary & Secondary Cable Consortium & Educational Broadband Service

Evaluation:
- Completion of pilot WiMax system testing.
- WiMax availability city-wide.
- Community Centers will be able to provide online educational programs to assist MPS students, parents, and adult education interests.
- Students will be able to use wireless laptops and communication devices both at school and in their homes.
- Interactive video tutoring programs will enhance home-based and incarcerated students.
- Security monitoring and administration will become more efficient.
- Communications become more dependable among schools, parents, and students.
**4.07: Information & Network Security**

**Goal:**
To ensure that information resources and the underlying infrastructure are properly secured from unauthorized access.

**Primary Responsibility:**
Division of Technology

**Target Audience:**
Entire District

**Background:**
Our society is undergoing a fundamental and dramatic change in this new Information Age. The change is global in its scope and has been accelerated with the introduction and acceptance of the Internet as a tool. In order to keep pace, educational institutions are challenged with introducing new technologies to facilitate the professional growth of its teachers and to better prepare its students in facing the new demands and challenges of the new world.

The benefits are obvious:
- Make learning more interactive
- Enhance the enjoyment of learning.
- Individualize and customize the curriculum to match learners' developmental needs as well as personal interests.
- Enhance avenues for collaboration among family members and the school community.
- Improve methods of accountability and reporting.
- Ultimately technology may transform the educational content and motivate students toward lifelong learning.

Today's children need to be connected to this world in order to receive a useful education and to prepare them to deal with it when they graduate. Computer uses and expectations in schools have been and are evolving as technology, connectivity, and software change.

With the proliferation of the Internet and new technologies, MPS's responsibility for risk management and information protection is becoming inherently more important. Threats, whether external or internal, are very real. In modern distributed environments traditional approaches to information protection may not be appropriate.

**Current Status:**
To effectively address the information security needs of the district, the Technology Department deemed it important, not only to concentrate on Technology solutions, but to change/improve existing Processes and to change the culture (the People element).

From a Technology Perspective:
- Perimeter firewalls have been upgraded
- Multiple layers of protection have been implemented to minimize external risks (DMZ's)
- Redundant Internet pipelines (Central Services and Technology Center)
4.07: Information & Network Security (continued)

- Improved SPAM Filtering capabilities by upgrading the SMTP gateway software to Symantec SMTP for Mail Gateway 5.0, which utilizes Bright Mail technology
- Upgraded the virus protection infrastructure to enable centralized management, distribution and reporting of client software
- Implemented a network access control solution for remote connections to the MPS Network (Dial-In, VPN), where a host integrity check is performed prior to allowing access to Network resources.
- Deploying full disk encryption software to staff laptops using Utimaco’s SafeGuard Easy.

From a Process Perspective:
- Created a District Information Security Philosophy
- Developed Information Security Policy
- Developed System Classification Framework
- Beginning To Drive Out Technology Security Standards

From a People Perspective:
- Beginning the process of end-user security awareness (through newsletters, web-site)

Future Vision:
Information and network security is a constantly evolving process. New security technologies, techniques, design decisions and processes need to be evaluated on a regular basis. Some of the initiatives that MPS will be exploring and looking to implement include:

- Centrally Controlled Resources (Internal Firewalls): Critical business systems providing essential services to MPS users are to be controlled and managed centrally (Technology Center/Central Services) to ensure availability, integrity and confidentiality of information assets. Internal and external threats should be viewed as the same. The same security measures deployed externally should be deployed internally. Effort will entail a redesign and reconfiguration of the network.

- Directory Services Infrastructure: Complete the build out of the District’s core Directory Services Infrastructure, which supports account provisioning from source systems (eSIS for students, PeopleSoft for staff) and provides a single point of user account administration. Develop and implement a plan for integrating District applications into the Directory Services Infrastructure for authentication.

- N-Tier Architectures: All web based applications should be designed to maximize the benefits of a N-Tier architecture with appropriate security measures—encryption, authentication, authorization—designed and implemented depending on the criticality and sensitivity of the business application.

- Enterprise Certificate Authority: Developing a MPS Certificate Authority (CA) based on secure sockets layer (SSL) technology provides MPS the capability to issue server/client certificates, which enables secure internal-to-internal and external-to-internal communications between: user-to-application, application-to-application, server-to-server or any combination thereof. Utilizing SSL enables MPS to improve data privacy, confidentiality, integrity and protection. An internally developed CA vs. purchasing certificates from an external party is cost advantageous and provides more flexibility and control.

- Network Resource Segmentation: Network resources should be separated by function (service) and use (internal vs. external). Dedicated machines should be utilized for each network resource, in the event that particular machine malfunctions or no longer operates, other network resources would not be affected.

Evaluation:
- Compliance to an Internal/External Risk Assessment conducted by an external party.
- Increased number of critical applications utilizing encryption technologies for user authentication and sensitive data transfer.
5.0 System Software & Support

5.01: School Based Hardware

Goal:
To provide students and teachers with standard levels of technology hardware and software access.

Primary Responsibility:
Division of Technology

Target Audience:
Students & Staff

Background:
The amount of technology related hardware and software varied greatly from school to school. Most of the technology equipment that was implemented in schools prior to 1995 was placed into computer labs. The current trend is to provide more access to technology in the classroom to supplement the computer lab experiences students receives. There are over 29,000 computers in the District, 19,000 Windows PC’s and 10,000 Apple PC’s.

Technology is viewed as more than just computers. This includes the following devices: scanners, disc players, video/data projectors, smart boards, color laser printers and PDA’s. The minimum configuration for classrooms within the district is 5 networked student multi-media computers, 1 networked teacher multi-media computer, and access to 1 high quality printer. Other technology devices such as TV/Monitor, VCR’s, video cameras and video/data projectors can be shared within the school on a reservation basis. The variety and amount of shared technology devices can be influenced by such things as the curriculum focus of the school, grade level of the students served, and the knowledge and expertise of the staff.

The use of laptop computers is increasing on a yearly basis. There is also an increase in the use of laptops with professional development programs for teachers and principals.

Current Status:
Today teachers in every classroom can access the network to enhance the teaching and learning environment. Teachers can access and maintain critical student data from the classroom. Implementation of desktop standardization policies have allowed for consistent maintenance and support procedures. Desktops are managed in an effort to keep the same look and feel across all desktops. Enterprise Anti-Virus software has been distributed to all enterprise servers to keep desktops updated to minimize attacks from viruses and SPAM. Maintaining computers from a centrally equipped center has been implemented with over 19,000 devices currently being monitored to ensure machine operability and to augment the leaning experience.

The District has standardized on the following PC vendors: Dell and Apple.

- The District has standardized personal computing vendors to Dell and Apple. This allowed the District to negotiate advantageous pricing, consolidate purchasing efforts, and provide a standard image.
- Defined minimal client operating system software (i.e., Windows XP, OS X) supported for both Apple and Windows-based computers. This provided greater compatibility and interoperability with accessing district resources. In addition, MPS was able to reduce desktop support costs and centrally control workstations for inventory and software distribution purposes.
- Continuing the upgrade client operating system software to MPS standards.
5.01: School Based Hardware (continued)

Future Vision:
With the increased reliance on technology as an educational/learning tool, personal computing demands increases inherently, especially as it relates to memory and processing power. As a result, older personal computers (workstations/laptops) need to be decommissioned and replaced. With the Microsoft Settlement Funds, the District plans on refreshing technology at the schools to achieve the goal of 3 to 1 (students to computers) equitable computing that meets minimum technology standards.

Evaluation:
- The ratio of computers to students across the district.
- Reduction in support calls related to desktop computing as a result of the decommissioning of legacy computers and upgrading client operating system software.
5.02: *Network Operating System Architecture*

**Goal:**
To provide network accessibility, security, and maintenance district-wide through a single contiguous medium.

**Primary Responsibility:**
Division of Technology

**Target Audience:**
All School District Personnel

**Background:**
In 1994, MPS began implementing individual Novell networks as its network operation system (NOS). While useful at the time, technology, security concerns, and network administrative needs have grown beyond the capability of the current network configuration. When implemented, each school was designed as a separate networked entity, essentially creating over 180 independent networks operating under the MPS umbrella. This created a management hurdle when it came time to standardize user information, computer implementations, and system maintenance.

In August of 2004, MPS selected Microsoft’s Active Directory to replace the Novell network. The conversion started in October 2004 and was completed in October 2007. This will greatly reduce the administrative task required for supporting, upgrading and maintaining network services throughout the district.

**Current Status:**
MPS completed the Active Directory project in October 2007.

A single Active Directory network for the entire district, replacing the numerous school-based Novell networks provided the following benefits:

- Reduction in licensing costs
- Single point of administration
- Improved account management
- The ability to maintain Student / Staff personal documents as they transition through the district
- Backup of home directories centrally

**Future Vision:**
- Refresh School AD Servers
- Redistribute Domain Controller Responsibilities
- Explore and utilize the advance feature sets of AD
- Consider re-architecting a storage solution for home directories

**Evaluation:**
- Fewer AD outages
- Reduction in login times
5.03: Information Systems Monitoring

Goal:
Create a multi-tier system which will monitor critical MPS technology resources and alert, as soon as possible, MPS staff when it has been determined that these resources have or are about to become degraded.

Primary Responsibility:
Division of Technology

Target Audience:
Technology Department

Background:
The introduction of the Technology Support Center (TSC) has given MPS the ability to quickly and efficiently respond to end-user’s issues and concerns. The staff at the TSC are able to guide users thru problems that they have using various MPS applications. This quick response allows MPS staff to recover from technical issues.

The one weakness to our current model of providing support to users is that it was difficult to predict when a problem is going to occur. Typically the first time someone in the Technology Department finds out about an issue is after a user has called the TSC.

System monitoring is the ability to automatically monitor various applications and hardware in order to prevent issues from occurring and alerting staff as quickly as possible if they do.

Current Status:
Due to limitations in a single vendor approach to monitoring, it has been determined that a more flexible system of monitoring tools would be more advantageous in our heterogeneous environment. Having a set of best of breed products to monitor the four major areas of our environment (Windows, Applications, UNIX and Network) that communicate together is a more sensible approach to monitoring than trying to force one monitoring application to handle every aspect of our environment.

These products handle different aspects of our environment. MOM from Microsoft for monitoring Windows based systems and applications, the Openview suite from Hewlett Packard to monitor the UNIX environment and its applications and a combination of Nagios and PRTG to monitor system uptime along with switch performance are the products we have determined make the most sense for the district.

These systems, when appropriate, will coordinate together their information so Technical Services staff will be able to quickly be notified of any issues, get proactive information about the state of our systems and plan system upgrades with capacity management.
5.03: **Information Systems Monitoring** (continued)

**Future Vision:**
- Using the new Active Directory environment, allow staff members greater access to monitoring tools.
- Train and provide access to a wider group of staff, especially the TSC.
- Give the helpdesk the ability to have MPS monitoring tools constantly up in order to constantly present information about the MPS environment, network, status of servers and other critical information.
- Integrate MPS applications so they can report their successes and possible failures to the monitoring systems to allow a centralized warehouse of information regarding the status of various MPS functions.
- Utilize email listservs to create an easy to manage system of notification.

**Evaluation:**
- Improve application and system uptime and performance with automatic notification of various issues with performance, availability and other metrics.
- Expand the number of systems, applications, metrics and logs that the monitoring system covers.
- Increase the set of historical data regarding performance to allow for a greater understanding of the long range status of MPS systems and applications.
- Grow the number of MPS Technology staff who have access to the various monitoring tools.
- Standardize monitoring tool set for predicative monitoring.
- Increase on-line availability.
5.04: Enterprise Backup & Recovery

Goal:
Maintain and expand the MPS critical enterprise backup environment.

Primary Responsibility:
Technical Services

Target Audience:
Division of Technology

Background:
Restoring data for enterprise MPS systems and applications is crucial to insure MPS’s ability to recover from data corruption or system failure. This data is backed up to magnetic tape and these tapes are stored off-site. The backup should run in the background as much as possible to prevent impacting system operation.

Current Status:
MPS has multiple approaches to backing up data. For most servers, data is backed up directly over the network to our backup server which then takes the data and puts it on magnetic tape. We have recently upgraded our backup environment with a new backup server which has a much faster network connection and the introduction of a third tape library which allows us to backup more systems at the same time. With this new hardware, our overall capacity of backups is 200 Terabytes of information. We have also expanded how we do backups by including a hot backup of the email system which allows us to backup the email servers without interruption to the end users.

For MPS mission critical servers, we use a split mirror procedure which takes a snapshot of the data and then we back this snapshot to tape. The advantage with this approach is any bottleneck with backing up large amounts of data over the network is avoided since the snapshot backup does not utilize the network to transmit the data to be backed up and since the snapshot only takes seconds it avoids long downtime of the critical applications that a network backup would require.

The operating systems of our critical Hewlett Packard servers, which run ESIS, IFAS, PeopleSoft among others, are backed up using the HP Ignite toolset once a week over the network. This OS backup allows for a quick rebuilding of the system in case of a complete crash of the system. The ignite process also records server configuration information to a network drive which would be helpful in a disaster recovery procedure.

The data is preserved for 2-3 weeks in the regards to most backups and 2 months for the first weekend backup of the month. Information is backed up directly offsite over the network to the secondary datacenter. This eliminates the security issue of transporting tapes offsite on a daily basis where the sensitive data could be lost or corrupted due to environmental factors such as weather.

MPS has a backup system located at both data centers, Central Services and Technology Center, which are compatible with each other. This allows backups done from one location to be restored at another and vice versa. This expands our disaster recovery options. For example, if we need to rebuild the Central Services data center at the Technology Center we can do this utilizing the backup library located at the Technology Center. Our most critical servers also utilize our EMC Disk array SRDF system which takes data written to servers at the Central Services data center and sends this data to the Technology Center to be written at the EMC disk array there. This further enhances our options in case of a disaster recovery scenario.
5.04: Enterprise Backup & Recovery (continued)

Future Vision:
MPS’s backup plan is designed to allow the greatest amount of disaster recovery options with the least amount of impact to application performance. This will be improved through the following processes:

- Constantly monitor and fine tune the performance of the backup processes.
- Constantly inventory the introduction of new servers to entail that they are being backed up according to our procedures.
- Upgrade, patch and maintain the Omniback backup software to improve performance and reliability.
- Expand the SRDF process to include more servers.
- Enhance the backup of various databases to reduce any possible downtime while the backup is running.

Evaluation:

- Maintain 98% backup success rate for critical MPS systems.
- Fine tune backup configuration to maintain smallest possible backup window to reduce any possible impact on system performance.
- Ensure multiple offsite copies of data to allow for flexible disaster recovery process.
- Common back-up strategy
- Seamless restore processes.
5.05: School Based Technology Coordinator Support

**Goal:**
To provide support for the implementation, maintenance, and upgrading of school technology by certified technical professionals.

**Primary Responsibility:**
Division of Technology

**Target Audience:**
School Administration

**Background:**
In the past schools were asked to designate a person(s) from their school staff as their Technology Coordinator (TC). This person oversaw the day-to-day operation and maintenance of technology in the school. They were usually the first contact for their staff for any technology issues. The TC would become the contact person for the Department of Technology when local information is sought on how and what technology is being used in the school. In the past, the TC was usually a certificated teacher with “techie” skills. This person could understand what teachers and students needed, as well as setup and network workstations and printers, and install software. With the progress of the wiring projects all schools have acquired network and Internet access, while at the same time budget cuts are reducing the availability of a school staff person with appropriate TC skills.

**Current Status:**
The Division of Technology is now shifting its focus from TCs, who supported the hardware and wires in schools, to Instructional Technology Leaders, whose focus will be helping teachers successfully integrate and incorporate technology into the curriculum. Technical support services will go uninterrupted as the Division of Technology will provide staff on a “buyback” basis to perform the technical work required in schools in order to keep the technology running. The support services encompass all facets of technology support within the schools for both the Windows and Macintosh computer platforms.

The Division strongly encourages schools to purchase this buyback service to support their schools technology. To date over 100 schools are participating in the buyback program (Appendix D).
5.05: School Based Technology Coordinator Support

The Division of Technology provides the following support as part of the buyback service:

Desktop Management
Third Party Software Installs (On-site or Remote)
- Accelerated Reader
- Attainment Software
- Microsoft Office

Computer Maintenance
- Removing Cached Files
- Windows Updates
- Maintenance of Managed Workstation Files
- Running Virus/Spyware Scans
- Imaging

Second-tier Phone Support

Classroom Computer Configurations
- Mac Setup
- PC Setup- Student

User Management
- Folder Cleanup
- Password Changes
- Adding/Creatting New Users (Mac & AD)
- Creating Shared Drives
- Creating Groups and Shares
- Managing Applications

Troubleshooting Student Workstations
- Checking Ethernet Settings
- Checking Hardware Settings
- Basic Computer Settings

New Printer Setup
- Unboxing
- Network Configuration

Refer to Appendix D for a listing of schools who have purchased buyback service.

Future Vision:
- Instructional Technology Leaders (ITLs) will focus on helping teachers successfully integrate and incorporate technology into the curriculum.
- The Division of Technology will continue to offer the TC buyback program to all schools

Evaluation:
- Increase of ITLs in schools
- Classroom walkthrough data
- Increase of the schools buying back support services
5.06: Technology Support Center (7 x 16)

Goal:
To implement a user support model for off hours.

Primary Responsibility:
Division of Technology

Target Audience:
All staff

Background:
The district staff use of technology based tools to support job functions is increasing on an ongoing basis. Tools to support communication and collaboration are growing at a faster rate than the use of business applications. Several factors are accelerating the demand for off-hours support:

- An increasing use of eSIS and a resulting increase in work being done by school staff in off hours
- Community Learning Centers and Supplemental Service Providers providing tutoring services to MPS students after school hours
- Increasing use of Parent Assistant and a possible demand to open support to parents
- The student laptop project and related initiatives that might lead us to open support to families with laptops, etc.

Providing a help desk support function, on a limited basis, outside the regular business day is needed to support the growing community of work at home users and possibly parents. Fiscal and staff constraints are limiting factors.

Current Status:
The MPS Technology Support Center now operates 5 days per week, 7 am to 4:30 pm, and 12 months of the year. The Tech Support Center staff also provides training services. Currently the Technology Support Center is staffed with eight FTE MPS employees, but the workload has grown—each person supports over 1,000 MPS employees—and there seems to be little potential to provide additional coverage simply by extending the hours of this group.

Future Vision:
Initially, some expanded support function beyond the business day is needed. For example, the Technology Support Center hours may be expanded to from 7:00 A.M. to 8:00 P.M. MPS will monitor usage of the off hours support function and expand as cost justification dictates. The extended day support may be external to MPS and will likely need to involve some use of contract resources. An interesting option would be contracting with the UW-Milwaukee Student Technology Services (STS) for this support.

Evaluation:
- 1st simply monitor usage.
- 2nd create a quality assurance survey for off hours support.
- 3rd identify options for external support and related needs for funding.
5.07: Interactive Video Network

Goal:
To provide interactive video capabilities to every MPS school.

Primary Responsibility:
Division of Technology

Target Audience:
Students & Staff

Background:
Interactive compressed video technology was first introduced to several MPS schools via leased line technologies in the mid nineties. The MPS LAN/WAN network was also being implemented during this time period and was designed to provide the large bandwidths needed for IP-based video protocol. The video network design gives MPS schools the benefit of no fee calls for local and international IP video transmissions.

Current Status:
There are over 50 MPS video systems using IP video based systems. Some of these sites were upgraded to IP codecs from legacy leased line compressed video technologies. Many of the MPS schools have been upgraded to network switch technology. This allows a single mobile videoconference system to be connected to our configured video VLAN and utilized in any classroom.

Most of these systems are only capable of a point-to-point videoconference between two sites. A Polycom Multipoint Conferencing Unit video bridge resides at the Technology Support Center. The video bridge allows for multiple site video and audio conferencing in various display configurations. The bridge also allows transcoding of unlike protocols such as H.323 (IP) to H.320 (ISDN). The bridge interfacing capabilities, along with other available network gateways, creates an unbridled path of network connectivity to video sites around the world.

A TCREliance Video Network Management server also resides at the Technology Support Center. The web-based server allows MPS video sites to schedule their own videoconferences. The combination of a robust network, video bridge, and on-line scheduler gives MPS video sites the independence of controlling their own video collaborations from concept to conference.

In addition, two Media Site Live (MSL) systems have been purchased to enhance training and communications for the MPS district. One system resides in a presentation room at the Tech Support Center and one system is mobile. Presentations can be broadcast live or archived for on demand viewing from any authorized computer with Windows Media Player. The MSL webcast systems allow for district-wide timely communications, curriculum based standards training, off-site viewing of meetings or presentations, and reference materials for administrative, health, and safety concerns.
5.07: *Interactive Video Network* (continued)

**Future Vision:**
The MPS video network infrastructure continues to grow and flourish. Video technology economics, along with E-Rateable video codecs, will allow more schools to acquire videoconference systems to supplement curriculum and resources, and make more effective use of staff time.

- Year 1: Continue current technology trends to inform schools of applicable distance learning uses along with grant and E-Rateable information to acquire video conference systems. Continue training of district personnel on using Media Site Live systems for applications training and district communications.
- Year 2: Install E-Rate purchased video conference systems. Investigate grant programs and other funding sources for video conference system purchases at remaining MPS schools.
- Year 3: Install remaining video conference systems in MPS schools. Continue development of curriculum and communications programs using interactive video to enhance district wide communications.

**Evaluation:**
- Video installation in at least one location in each school.
- Video capability in each classroom.
- District video sites will provide and receive more distance learning education.
- Two-way interactive and IP media broadcasts will become the norm for district communications.
- Professional Development will become more efficient by using video technologies.
- Time and travel savings will increase through the use of video meetings.
5.08: Computer Maintenance and Repair

Goal:
To provide cost effective maintenance and repair of PC (Windows) and Apple (Mac) laptops and desktops for students and staff.

Primary Responsibility:
Division of Technology

Target Audience:
School District

Background:
MPS has an install base of approximately 19,000 PC’s and 10,000 Apple computers. The District has established hardware and software standards for both the Windows and Apple computing platforms. Schools and departments are responsible for maintaining their personal computers. Schools designate individual(s) such as Secretaries, Engineers, Technology Coordinators to coordinate the repair of computers and peripherals. The designated individuals are authorized to submit work requests to the Division of Technology for repairs. Technicians coordinate the repair of in warranty computers to Apple, Dell and HP for printers. Out of warranty equipment they make repairs Current MPS standard PC’s (Dell) and alternate Apple computers come with a 5year warranty for desktops and a 3year warranty for laptops. The Dell computers come from the factory with MPS’s standard image for software. This enables ease of installation at the school or department site. Besides repairs, upgrading and setting up of new or donated computers is another service that is offered by the computer maintenance and repair group.

Current Status:
The Department of Technology currently provides the following support for computer repair:
- Technology Support Call Center and the HEAT ticket tracking system.
- Setup of new equipment.
- Setup of library servers.

Warranty repairs by Manufacturer
- Gateway
- Apple
- Hewlett Packard
- Dell
- Omnitech (Now known as MPC Solutions)
### MPS Macintosh Workstation/Laptop Standards June 2007

#### Classroom Desktop
**iMAC 17-inch LCD : Intel Core 2 Duo 1.83 GHz**
- 512 MB RAM
- 160 GB Hard Drive
- 5 Year on-site warranty
Includes a 24x Combo drive (DVD-ROM, CD-RW), three USB 2.0 ports, two FireWire 400 ports, built-in AirPort Extreme wireless networking, Gigabit Ethernet, mini-DVI video out, built-in stereo speakers, a built-in microphone, built-in iSight camera, audio in/out jacks, keyboard, and mouse

#### Classroom Laptop
**MacBook 13.3-inch: Intel Core 2 Duo 2 GHZ**
- 1 GB RAM
- 80 GB Hard Drive
- 3 Year on-site warranty
Includes a Combo drive (DVD-ROM, CD-RW), AirPort Extreme wireless networking (802.11g), Bluetooth 2.0+EDR, Gigabit Ethernet, two USB 2.0 ports, one FireWire port, Built-in iSight camera, and optical digital and analog audio in/out

#### Superdrive Desktop
**iMAC 17-inch LCD : Intel Core 2 Duo 2 GHZ**
- 1 GB RAM
- 160GB Hard Drive
- 5 Year on-site warranty
Includes a 8x SuperDrive (DVD+R DL/DVD±RW/CD-RW), three USB 2.0 ports, two FireWire 400 ports, built-in AirPort Extreme wireless networking, Gigabit Ethernet, mini-DVI video out, built-in stereo speakers, a built-in microphone, built-in iSight camera, audio in/out jacks, keyboard, and mouse

### MPS PC Desktop/Laptop Standards July 2007

#### Classroom Standard Desktop
**Dell Optiplex GX740**
17-inch LCD : AMD Athlon 2.0GHZ
- 1 GB (2X512MB)RAM
- 80 GB Hard Drive
- USB Optical Mouse
- 5 Year on-site warranty

#### Administration Standard Desktop
**Dell Optiplex GX745**
17-inch LCD: Intel Core 2 Duo 1.8GHZ
- 1 GB (1X1GB) RAM
- 80 GB Hard Drive
- USB Optical Mouse
- 5 Year on-site warranty
- Microsoft Office Pro

Include a 3-1/2" floppy, CD-RW/DVD combo, integrated 10/100 Ethernet card, wireless NIC 802.11b/g, parallel port, four USB ports, sound card, video card and Windows Vista Business license loaded as Win XP Pro. Imaged with a standard group of MPS software titles.

#### Classroom Standard Laptop
**Dell Latitude D520**
15-inch XGA: Intel Celeron 1.6 GHZ
- 512MB RAM
- 40GB Hard Drive
- 3 Year on-site warranty

#### Administration Standard Laptop
**Dell Latitude D505**
15-inch XGA: Intel Pentium M 1.5 GHZ
- 512MB RAM
- 30GB Hard Drive
- USB Optical Mouse
- 3 Year on-site warranty
- Microsoft Office Pro
5.08: *Computer Maintenance and Repair* (continued)

Library Servers
- Schools obtain necessary software from either Winnebago or Follette. The computer repair group will do the set up and installation.

Macintosh Servers
- The computer repair group will service and make necessary repairs to schools Macintosh servers.
- Additional hard drives and memory can be added when needed.

Future Vision:
- Adding more schools to the buyback program
- Increasing staff to support buyback schools
- Providing professional development for buyback Technicians

Evaluation:
- Providing quality cost effective timely hardware service and technical support for all MPS schools.
- All Macs will use OS 10.X and all PCs will use XP or 2000 as the OS,
- Schools will replace desktops every five (5) years.
6.0 Application Development

6.01: Data Warehouse, Integrated Resource Information System (IRIS) and Geographic Information System (GIS)

Goal:
The goal of the Data Warehouse is to unify district records and methodologies for consistent reporting of student performance. Research projects will be able to correlate data such as grade point averages and assessment scores with attendance, gender and economic background. The availability of this data will allow educators to make data driven decisions regarding new programs and modification of current ones.

Also, MPS and the Wisconsin Center for Education Research have submitted a proposal to the U.S. Department of Education to fund a four year project to build a comprehensive integrated resource information system (IRIS). IRIS will modify the MPS budget system so it is more effectively linked to outcomes and cost-effectiveness. IRIS should also make it possible to evaluate district resource use initiatives through a link to student learning gains. IRIS is intended to track all important resource inputs to education at the school, classroom, and student levels and allow this data to be linked to educational services and instructional strategies that can, in turn, be linked to students.

Primary Responsibility:
Research and Assessment Division, Division of Technology

Target Audience:
All MPS Schools and Staff

Background:
For a number of years MPS has maintained a “data warehouse” of primarily student data. In September of 2007 MPS implemented a second generation Data Warehouse system which provided improved and expanded reporting. This system includes a “Dashboard” feature to provide easy access to data by school staffs, especially principals. The current Data Warehouse uses the K12 Intelligence product provided by VersiFit.

Future enhancements to the Data Warehouse will include support for the Integrated Resource Information System (IRIS). IRIS will provide the kind of micro-detail currently not available in any standard state or district data system. It will allow MPS to determine in a systematic way “what works” to facilitate student achievement at the student (e.g., tutoring, courses), classroom (e.g., content taught, class size), and school (e.g., size, extent of professional community, use of instructional coaches) levels.

Data on professional development within MPS is not now tracked in a systematic way, and the first phase of IRIS will be to implement a system to do this; this is also noted in the section below on the PeopleSoft Human Resources System.

Also, MPS has begun working to gain the ability to analyze data with a “spatial” dimension (i.e., data that lends itself to analysis using maps) using Geographic Information System (GIS) technology.

Current Status:
The second generation of the Data Warehouse and the new Dashboard using K12 Intelligence was implemented in September of 2007. The project to implement GIS ability is in the planning stage.
6.01: Data Warehouse, Integrated Resource Information System (IRIS) and Geographic Information System (GIS) (continued)

Future Vision:
Projects in the plan period may include:

- Enhancing the Data Warehouse and Dashboard with new features such as a teacher dashboard.
- Adding financial functions to the Data Warehouse.
- Implementing the Integrated Resource Information System (IRIS), partly through an expansion of the existing Data Warehouse.
- Implementing the ability for data analysis using Geographic Information System ability.

Evaluation:
- The number of schools using Data Warehouse reports.
- The number of administrators using GIS ability.
- Ability to make more effective resource allocation decisions through use of IRIS data.
**6.02: Student Records Management System (eSIS)**

**Goal:**
To provide timely access to student information, improve data collection and reporting efficiency, and support data driven decision-making at both the school and district level.

**Primary Responsibility:**
Student Services Division, Division of Technology, Instructional Leadership and Support, Division of Recreation, Small High Schools, Early Childhood

**Target Audience:**
All MPS School and Staff

**Background:**
The Electronic Student Information System (eSIS) is a comprehensive student records system. eSIS was implemented in advance of the 1999/2000 school year and is used by all schools for at least enrollment and attendance. eSIS was implemented in various contract schools in the 2004/2005 school year. The vendor that supplies eSIS is Administrative Assistants Ltd. (AAL).

In addition to the software supplied by AAL, MPS has developed custom modules to support the student assignment processes, the student promotion system, and several other functions. Some customizations developed by AAL, primarily to support state reporting requirements, have also been implemented. Note that special education functions are supported by the separate SSIMS system which used the Encore product.

The benefits of eSIS include:

- Providing a single database of student data.
- Providing integration among modules and eliminating duplicate entry of data for attendance, grade book, and report card processing.
- Integration of data for state reporting.

**Current Status:**
In the 2004/2005 school year MPS implemented the ability for detailed State of Wisconsin student level reporting and use of the Wisconsin Student Number (WSN) and Individual Student Enrollment (ISES) systems.

The Parent Assistant and Student Assistant modules of eSIS have been implemented.

A number of schools have not yet implemented the eSIS report card and grade book features, and a project for the start of school in the Fall of 2007 was the implementation of these features at remaining schools under the “Full eSIS” project.

eSIS experiences performance problems at times of high usage, and a server hardware upgrade will be required during 2007-08.
6.02: **Student Records Management System (eSIS)** (continued)

**Future Vision:**
Projects in the plan period may include:

- Replace the A Plus data system that supports after school programs.
- Apply a major software upgrade of the AAL software in approximately 2009-2010; among other improvements, this upgrade will rewrite the system software in the Java language.
- Implement a Student Interventions system, which may build on and replace the Problem Solving system.
- Improve the use of imaging to possibly support improved handling of cumulative folders.
- Provide a new automated system to automate and add sophistication to the process of parents and students choosing schools. This ability would be targeted at high school students.
- Possibly provide online support for student enrollment.
- Develop an interface to exchange immunizations data with the State of Wisconsin.
- Replace the existing Head Start module.

**Evaluation:**

- Assess the number of schools successfully using all features of the eSIS system, including report cards, grade books, and Parent Assistant.
- Increase the extent of the use of eSIS within the Diversified Schools.
6.03: PeopleSoft Human Resources System

**Goal:**
To provide a more efficient system for managing personnel and payroll records within MPS.

**Primary Responsibility:**
Human resources, Finance, and Division of Technology

**Target Audience:**
All MPS Employees

**Background:**
The PeopleSoft Human Resources System was initially implemented in January 2000. A major upgrade to version 8.8 was completed in April 2004.

**Current Status:**
The PeopleSoft Human Resources System is in a stable production environment. Upgrades from the vendor are delivered in a predictable manner and timeline. MPS began work in September of 2007 to upgrade to version 9.0 of PeopleSoft. PeopleSoft was purchased in late 2004 by Oracle, and Oracle has been planning to integrate PeopleSoft and its own similar product into a single product with the name of Fusion. The 9.0 version of PeopleSoft that MPS is upgrading too will likely be the last distinct version of the PeopleSoft product, so progressing to this version will position MPS to remain in a stable environment for several years while considering future directions.

**Future Vision:**
Projects in the plan period may include:

- Upgrade of PeopleSoft to the 9.0 version.
- Implement the PeopleSoft eBenefits module, which will provide employee self-service through the Internet; ideally this system will be available for benefits open enrollment in the fall of 2008.
- Implement tracking for professional development, partly to support goals in the MPS strategic Action Plan and also to help support the IRIS system; this system may use some combination of Enroll and PeopleSoft.
- Possibly replace the existing Online Teacher Application system using the PeopleSoft Candidate Gateway and Talent Acquisition Manager modules.
- Continue and refine document imaging projects in Human Resources.

**Evaluation:**
- Planned modules are successfully implemented and provide needed support for initiatives such as IRIS.
6.04: Electronic Communication and Portal

**Goal:**
To provide a common method to post and communicate data for MPS students, schools, parents, staff, and members of the public using a unified portal Web site.

**Primary Responsibility:**
Application Development, Learning Technologies, All Departments (each administering sections of the Portal)

**Target Audience:**
MPS Students, Schools, Parents, Public, and Staff

**Background:**
Organizations of all types are striving to take advantage of the powerful abilities now available to communicate using the Internet.

Three related concepts that organizations are seeking to implement are:

- Communicating through Web sites.
- Consolidating all of an organization’s Web sites into a single “portal.”
- Using “content management” ability to allow people to post items to a portal using “fill in the blanks” technology rather than programming in languages such as HTML or products such as DreamWeaver.

MPS has had Web site ability for some time and has been evolving in its use of this technology. In 2004 MPS installed the Plumtree portal and content management software product to manage the use of its Web sites. Plumtree has since been acquired by BEA. In 2005 MPS began consolidating its Web sites into a single site and using the term “MPS Portal.” The concept of the Portal is to provide a single location for all MPS information of interest to students, schools, parents, staff, and members of the public.

**Current Status:**
In May of 2007 MPS implemented an upgrade project that accomplished several goals:

- Apply a major software upgrade of the BEA product.
- Apply a new “look and feel” to the Portal.
- Implement an improved organization of the site’s contents.
- Allow departments to publish items directly rather than having to work through an intermediary.

**Future Vision:**
MPS will work to continuously improve its use of the Portal in several ways:

- Provide better management of important dates, news, and events, especially as displayed on the home page.
- Provide better content for parents.
- Work to ensure that each MPS department is using the Portal abilities to post useful content.
- Provide better overall management, ensuring that outdated documents are removed, etc.
- Implement workflow processes to streamline operations

Projects in the plan period may include updating of the BEA software and also periodic redesigning of the portal appearance and content.
6.04: *Electronic Communication and Portal* (continued)

**Evaluation Method:**
- Monitor Portal usage statistics.
- Conduct a periodic survey on Portal usage by MPS staff.
- Use a steering committee of department representatives to periodically review the site and ensure that it is evolving and becoming increasingly effective.
6.05: *Financial Information System (IFAS)*

**Goal:**
To unify district financial records and methodologies for consistent accounting and budgeting practices.

**Primary Responsibility:**
Finance, Division of Technology

**Target Audience:**
District Administrative Staff

**Background:**
MPS implemented the Integrated Financial and Administrative Solution (IFAS) in April of 2003. SunGard is the vendor that provides the IFAS product. IFAS replaced several legacy systems, including, budgeting, accounts payable, general ledger, purchasing, and stores inventory.

**Current Status:**
IFAS is in a stable production environment.

The Government Finance Officers Association (GFOA) has been working with MPS to develop plans to make use of performance objectives in budgeting and financial reporting.

**Future Vision:**
Projects in the plan period may include:

- Add the ability to IFAS to track and report on performance objectives.
- Apply a major software upgrade to IFAS in approximately 2008-2009.

**Evaluation:**
- Evaluate the effectiveness of the use of performance objectives data.
6.06: **Student Records Management System for Special Services**

**Goal:**
To implement software to manage student data for special services.

**Primary Responsibility:**
Division of Special Services, Division of Technology

**Target Audience:**
All staff providing services to student with special education needs, special education students, parents, and other district staff.

**Background:**
The unique needs and requirements to support Special Services functions require a separate system from our core Student Records Management System. The Special Services Information Management System (SSIMS) implementation includes an automated electronic transfer of data between the two systems.

The Special Services Information Management System (SSIMS) was implemented in the 2004/05 school year. SSIMS uses the Encore commercial software product.

**Current Status:**
In most ways the implementation of SSIMS using Encore has been a success. But shortly after MPS began implementing Encore the product was purchased by a new vendor, Spectrum. MPS has had increasing difficulties with Spectrum, mainly revolving around Spectrum’s failure to deliver needed modules that had been contracted for and also updates to enable the system to comply with new federal and state laws. This has led to a situation in which it seems advisable to begin planning to replace Encore somewhat earlier than what otherwise would have been the end of the normal life of the system.

**Future Vision:**
Build on the successes achieved in SSIMS and implement a replacement product provided by a more responsive vendor.

In addition to the alternative of implementing a different special education product, an additional alternative would be to implement the relatively new special education module provided by AAL, the vendor that provides the eSIS system. Implementing the AAL special education module would provide the advantage of providing for more student functions within the integrated eSIS student system.

**Evaluation:**
- Ability of the new system to fully support all required special education functions.
6.07: **Facilities and Maintenance Information System**

**Goal:**
To manage building construction projects and maintenance work orders and provide performance and cost measurement accounting information on a timely basis for decision-making and district financial reporting.

**Primary Responsibility:**
Facilities and Maintenance, Finance, and the Division of Technology

**Target Audience:**
Facilities and Maintenance Division Staff, School and District Administrative Staff

**Background:**
MPS is seeking to replace the current Computerized Maintenance Management System (CMMS). The Facilities and Maintenance Division is currently working to implement the FacilityMAX system which is a product of Maximus.

**Current Status:**
The project to implement FacilityMAX has begun and is in the analysis phase. The analysis includes reconsideration and redesign of the related processes so as to take maximum advantage of the abilities of the new product.

**Future Vision:**
Projects in the plan period may include:

- Implementation of the FacilityMAX system.
- Upgrading of the Entity Relationship system that acts as a central source of codes on facilities and their locations.

**Evaluation:**
- Successful implementation of the FacilityMAX system.
6.08: Web Development

Goal:
To deploy web-based traditional administrative and non-traditional applications in a controlled and consistent manner.

Primary Responsibility:
Division of Technology, Learning Technologies

Target Audience:
All MPS School and Staff

Background:
With the proliferation of the use of the Internet and Web browsers, educational institutions are leveraging Web development technologies, such as Java, .NET, and ASP as the primary method for providing access to data application systems (e.g., payroll, human resources, student records, etc.).

Use of Web development provides these benefits:

- Centralized Control and Administration
- Reduced Deployment Costs
- Accessibility
- Universal Clients

MPS acknowledges these benefits and embraces the use of Web development technologies; however, MPS also understands that in order to properly design, develop, implement, maintain and deploy Web applications, standardization and training are important. By standardizing on key Web development tools, MPS can better focus its training efforts and begin developing application development standards and guidelines.

Current Status:
The project is essentially complete; all MPS data applications and also the Portal system use Web-based technology, with the single exception of the Nutrition system. All data applications are available to MPS staff through a unified Application Navigation Page.
7.0 Other

7.01: Disposal of Obsolete Technology

Goal:
To provide a cost effective means for disposal of obsolete computer equipment.

Primary Responsibility:
Division of Technology

Target Audience:
School Administration & Building Operations

Background:
With the emergence of increasingly sophisticated and faster desktop hardware over the past 15 years, schools have been plagued with what to do with outdated or obsolete technology. Obsolete PCs, contain high levels of hazardous materials, the most serious of which include lead and cadmium. If PCs are simply thrown into landfills, these old systems pose a hazardous waste problem because the hazardous substances in them can leach into the air, groundwater and soil.

Schools were storing obsolete equipment within the building taking up valuable storage and educational space. In 2004 the district completed two clean sweep projects where obsolete computer equipment was gathered together at the schools and then picked up by warehouse staff for delivery to the central warehouse. Schools are required to follow guidelines developed by the Purchasing Department for the obsolescence of computer equipment. As part of an agreement with Badger State Industries (BSI) this outdated technology is then picked up by BSI for the purpose of recycling/de-manufacturing the equipment through its Computer Recycling Program. The Computer Recycling Program is a Corrections’ community service project. It is funded, primarily, by a Wisconsin DNR Recycling Grant.

In May of 2006 we added an Obsolete Computer Equipment Removal category to the HEAT Service Request System. This new category allowed the schools to enter a request on-line to have obsolete computer equipment removed from their building. There is no charge to the schools at this time for this removal and recycling service. To date we have completed 166 requests for removal of obsolete equipment.

Current Status:
MPS has an agreement with Apple Computer Inc., to pickup and dispose of obsolete computer equipment. There is no charge to the District for the disposal service. As part of the agreement specific guidelines must be followed. The guidelines are straightforward:

a) The District either uses in house moving resources or contracts with a mover to pickup the obsolete equipment from the schools.
b) The obsolete equipment is then delivered to our 7th Street Warehouse
c) MPS technicians must go through and palletize the items by device type i.e., monitors, CPU’s, and misc. items each on their own pallet.

Apple also accepts printers and copy machines, again at no charge to MPS. Scheduling and pickup of the items has been very good and pick-ups usually occur within 2-3 days of placing the service request.
7.01: Disposal of Obsolete Technology (continued)

Future Vision:
Continue to research cost effective ways of recycling obsolete computer equipment.

Evaluation:
- Equipment is being disposed of in a controlled environmentally safe way
- Minimal amounts of obsolete computer equipment not stored within schools.
7.02: Interactive Voice Response (IVR)

Goal:
To increase communication between parents and the school through the use of technology.

Primary Responsibility:
Pupil Services and Division of Technology

Target Audience:
MPS Parents and Staff

Background:
Interactive Voice Response (IVR) technology continues to evolve. The terminology also changes. For our purposes, the simplest definition may be how does the technology empower a parent, using a telephone and interacting with a computer, to get or to provide information about their child.

Current Status:
Last year an average of 8,000 ‘absence notification’ messages were automatically generated each day. These messages inform parents of the absence of their child within two hours of the start of the school day. The technology is tolerant of answering machines, voice mail, busy signals, no answer, and similar situations. Up to five attempts are made in order to deliver the message.

The training sessions to empower school staff to send custom school messages are being conducted on a regular basis.

MPS Schools sent created 1,778 custom messages this year to over 500,000 contacts.

Future Vision:
The District expand the use of the system for urgent communications such as security concerns and communications to parents about unplanned school closings due to inclement weather. The District will expand and encourage schools to use the system to include custom messages for various school functions.

Evaluation:
- The number of schools using the absence notification functions.
- The number of schools using the custom message feature
- Feedback from Parents, staff and school administrators
7.03: **WYMS (FM) Radio Station**

**Goal:**
To support the educational program of Milwaukee Public Schools by providing a program service that is engaging and culturally relevant for the citizen of Milwaukee. We strive for excellence and innovation in all areas of programming and community engagement. We provide a POV that champions SE Wisconsin’s arts, citizens, civic vitality and culture. The station’s format is designed to bridge cultures and bring people together.

**Primary Responsibility:**
Department of Technology

**Target Audience:**
Culturally engaged and socially active 18-44 year olds.

**Background:**
WYMS has been on the air since 1973. For most of that time the station’s format has been jazz. Under the new management of Radio for Milwaukee, the station launched a new format in February of 2007 and moved to an eclectic mix of rock and urban music with voices of Milwaukee citizens woven into the sound of the station.

**Current Status:**
WYMS provides local music programming 24/7 with live hosts from 5am to 10pm daily.

**Future Vision:**
The station will be used to teach broadcast production and interviewing skills to MPS students through student interning.

**Evaluation:**
- Implementation of a high school radio intern program.
APPENDIX A: MPS Wide Area Network

Milwaukee Public Schools
Metro Ethernet Network

Central Office

Optiman Network

GIG Link

Tech Support Center

Internet

Large Schools

Large Schools

250 MB Link

250 MB Link

250 MB Link

250 MB Link

250 MB Link

250 MB Link

Facilities Office

Large Schools

Small to Medium Schools

Small to Medium Schools

Small to Medium Schools

Small to Medium Schools

500 MB Link

50 MB Link

50 MB Link

50 MB Link

50 MB Link

50 MB Link

Internet

Large Schools

250 MB Link

500 MB Link

500 MB Link

500 MB Link

500 MB Link
APPENDIX B: MPS Local Area Network (Schools)

Milwaukee Public Schools
Metro Ethernet Network

MC

AT&T Termination Switch

GIG Link

(Line of Demarcation)

GIG Link

Cisco 3750 EMI
24 Port 10/100/1000
Layer 3 Switch

GIG Links

Cisco 3550/3750
24 Port 100 FX
Layer 2 Switch

100 MB Fiber Links

Cisco 2950
24 Port 100 FX
Layer 2 Switch

CC 101

CC 202

10/2/08, P 218
APPENDIX C: Chronological Time Line – MPS Infrastructure

<table>
<thead>
<tr>
<th>TIMELINE</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1995</td>
<td>Start of LAN projects – wiring of the Intermediate Distribution Facility (IDFs) at each school.</td>
</tr>
<tr>
<td>June 1995</td>
<td>Start installation of Ameritech’s Frame-Relay backbone infrastructure to 72 sites in the district.</td>
</tr>
<tr>
<td>June 1997</td>
<td>Begin design phase of Ameritech’s ATM (SONET) to replace the existing Frame-Relay backbone.</td>
</tr>
<tr>
<td>January 1998</td>
<td>Begin Phase 1 LAN installations for Classroom Closets (CCs).</td>
</tr>
<tr>
<td>April 1998</td>
<td>Begin RFP phase for replacement of District telephone switches.</td>
</tr>
<tr>
<td>June 1999</td>
<td>Begin installation of Ameritech’s ATM (SONET) backbone infrastructure to all backbone and edge sites.</td>
</tr>
<tr>
<td>December 2000</td>
<td>Completion of the ATM (SONET) backbone infrastructure.</td>
</tr>
<tr>
<td>September 2002</td>
<td>Beginning of the Classroom Closets (CCs) upgrades.</td>
</tr>
<tr>
<td>May 2004 – March 2005</td>
<td>Completion of the Phase 1 LAN installations for Classroom Closets (CCs)</td>
</tr>
</tbody>
</table>

Approximate Number of Switched Schools

| 151 schools | Will be completed by December 31, 2004 |
| 14 schools  | Will be completed in the 1st quarter of 2005 |

165 schools Total schools

Total ATM (SONET) Connected Sites

| 3  | Core Sites |
| 20 | Back Bone Sites |
| 131 | Edge Sites |
| 154 | Total ATM Connected Sites |
### APPENDIX C: (continued)

<table>
<thead>
<tr>
<th>TIMELINE</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2006</td>
<td>Completion of switch upgrades in all school Classroom Closets (CC).</td>
</tr>
<tr>
<td></td>
<td>6300 Cisco switches installed in 147 schools replacing 10 Mb HUB Technology. 100 MB switched network speeds provided to the desktop.</td>
</tr>
<tr>
<td></td>
<td><em>NOTE: Some Schools were closed therefore switches were not replaced in all 165 school buildings.</em></td>
</tr>
<tr>
<td></td>
<td>Over 500 Routers and Switches installed in 147 School building Master Closets (MC) and Core Network to accommodate Opt-E-MAN network.</td>
</tr>
<tr>
<td></td>
<td>Network upgrades completed at all schools in May of 2007.</td>
</tr>
</tbody>
</table>
**APPENDIX D: Schools Purchasing TC Buyback Services (07/08)**

<table>
<thead>
<tr>
<th>High Schools</th>
<th>077</th>
<th>Auer</th>
<th>224</th>
<th>IDEAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>034  ALAS</td>
<td>081</td>
<td>Barton</td>
<td>232</td>
<td>Kagel</td>
</tr>
<tr>
<td>005  Aviation, Science &amp; Tech</td>
<td>356</td>
<td>Bethune</td>
<td></td>
<td></td>
</tr>
<tr>
<td>004  Community HS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>070  DIAL</td>
<td>092</td>
<td>Browning</td>
<td>083</td>
<td>King, M.L.</td>
</tr>
<tr>
<td>017  Dubois HS</td>
<td>093</td>
<td>Bruce</td>
<td>238</td>
<td>LaFollette</td>
</tr>
<tr>
<td>023  Entrepreneurship</td>
<td>098</td>
<td>Burbank</td>
<td>241</td>
<td>Lancaster School</td>
</tr>
<tr>
<td>040  Foster &amp; Williams</td>
<td>101</td>
<td>Carleton</td>
<td>244</td>
<td>Lee</td>
</tr>
<tr>
<td>010  Genesis</td>
<td></td>
<td></td>
<td>250</td>
<td>Lincoln Ave.</td>
</tr>
<tr>
<td>069  Madison Acad Campus</td>
<td>309</td>
<td>Carson Academy</td>
<td>253</td>
<td>Lloyd</td>
</tr>
<tr>
<td>064  Marshall Montessori IB</td>
<td>082</td>
<td>Chinese Lang Academy</td>
<td>256</td>
<td>Longfellow</td>
</tr>
<tr>
<td></td>
<td>110</td>
<td>Clarke Street</td>
<td>257</td>
<td>Lowell</td>
</tr>
<tr>
<td>637  Milw Leadership Acad.</td>
<td>114</td>
<td>Clemens</td>
<td>380</td>
<td>McNair</td>
</tr>
<tr>
<td>(inside French Immer)</td>
<td>117</td>
<td>Cooper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>057  Milw Learning Lab &amp; Inst.</td>
<td></td>
<td></td>
<td>226</td>
<td>Milw Sign Language</td>
</tr>
<tr>
<td>027  New Community Service</td>
<td>122</td>
<td>Curtin</td>
<td>283</td>
<td>Neeskara</td>
</tr>
<tr>
<td>009  PLI</td>
<td>125</td>
<td>Doerfler</td>
<td>301</td>
<td>Parkview</td>
</tr>
<tr>
<td>079  SUPAR</td>
<td>143</td>
<td>81st Street</td>
<td>313</td>
<td>Riley</td>
</tr>
<tr>
<td>(Schl for Urban Pl)</td>
<td>148</td>
<td>Elm Creative Arts</td>
<td>319</td>
<td>Sherman</td>
</tr>
<tr>
<td></td>
<td>158</td>
<td>Fernwood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>036  Washington-Exped Lrning</td>
<td></td>
<td></td>
<td>325</td>
<td>Silver Spring</td>
</tr>
<tr>
<td>037  Washington, Law, Educ</td>
<td>170</td>
<td>53rd Street</td>
<td>331</td>
<td>65th Street</td>
</tr>
<tr>
<td>039  Washington, IT</td>
<td>201</td>
<td>Fletcher</td>
<td>328</td>
<td>69th Street</td>
</tr>
<tr>
<td>068  WORK Institute</td>
<td>182</td>
<td>Fratney</td>
<td>167</td>
<td>Spanish Immersion</td>
</tr>
<tr>
<td></td>
<td>140</td>
<td>French Immersion</td>
<td>312</td>
<td>Starms Discovery</td>
</tr>
<tr>
<td></td>
<td>185</td>
<td>Gaenslen</td>
<td>149</td>
<td>Starms Early Childhood</td>
</tr>
<tr>
<td>051  Grand Avenue</td>
<td>196</td>
<td>Grantosa</td>
<td>343</td>
<td>Story School</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>344</td>
<td>Stuart</td>
</tr>
<tr>
<td>045  Burroughs</td>
<td>192</td>
<td>Goodrich</td>
<td>360</td>
<td>Thoreau</td>
</tr>
<tr>
<td>049  Fritsche</td>
<td>193</td>
<td>Grant</td>
<td>154</td>
<td>Thurston Woods</td>
</tr>
<tr>
<td>050  Kosciuszko</td>
<td>202</td>
<td>Greenfield</td>
<td>362</td>
<td>Tippecanoe</td>
</tr>
<tr>
<td>006  Lincoln MS</td>
<td>205</td>
<td>Hampton Ave</td>
<td>377</td>
<td>Twenty-first Street School</td>
</tr>
<tr>
<td>071  Milw Schl of Languages</td>
<td>208</td>
<td>Hartford</td>
<td>383</td>
<td>Urban Waldorf</td>
</tr>
<tr>
<td>052  Morse MS</td>
<td>211</td>
<td>Hawley</td>
<td>390</td>
<td>Vieau</td>
</tr>
<tr>
<td>061  Sarah Scott</td>
<td>214</td>
<td>Hayes</td>
<td>353</td>
<td>Westside Academy</td>
</tr>
<tr>
<td>(also 370)</td>
<td></td>
<td></td>
<td></td>
<td>(also 370)</td>
</tr>
<tr>
<td>075  Alcott</td>
<td>217</td>
<td>Hi-Mount</td>
<td>397</td>
<td>Whitman</td>
</tr>
<tr>
<td>073  Allen Field</td>
<td>218</td>
<td>Holmes</td>
<td>398</td>
<td>Whittier</td>
</tr>
<tr>
<td></td>
<td>220</td>
<td>Hopkins</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX E: Educational Broadcast System WiMAX Network

Milwaukee Area Instructional Network (MPS-MATC-UWM) EBS WiMAX Network

Vendor Comm. Tower

Community Residents

Computer
Internet Service

Laptop

POA

Television

Digital TV Service

Vendor Comm. Tower

City

Community Businesses

VOIP Service

Video Conferencing Service

Router

Vendor Comm. Tower

University of Wisconsin-Milwaukee Network

Router

Milwaukee Public Schools Network

Milwaukee Area Technical College Network