A Comprehensive Approach to Technology and Curriculum Integration
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EXECUTIVE SUMMARY:

At a time when the demands on public education are being transformed by an information-driven economy unbounded by borders or time zones, today’s students must acquire a broader body of skills essential for success in the 21st century. Education leaders across the country are taking the first steps towards realizing the full potential of mobile computing, wireless access, and digital learning resources. Now is the time for the District to transform its curriculum, school facilities, and educational experience with a series of investments aimed at creating a next-generation learning environment. To support this aim, voters in the Martinez Unified School District approved $45 million in school facility bonds to improve the learning environment for every student in the District, including a significant investment in a new generation of computing technology and infrastructure.

Approximately $4 million in bond proceeds will be allocated to fund a program aimed at transforming teaching and learning through technology integration. By committing to a progressive and innovative technology initiative, the District is poised to join a pioneering -- but rapidly growing -- community of educators. To better prepare for an effective implementation, the District commissioned this Technology Integration Plan to develop a carefully layered and sequenced approach to reap the full benefits of its technology investment.

Technology is a powerful tool, but is merely a means to an end, rather than an end in itself. New mobile technology will empower and better equip educators to meet the District’s strategic focus areas. In order to successfully utilize new technology to meet District goals, this plan provides a scheduled system of deployment, a multi-faceted approach to professional development, a best practices analysis for curriculum integration, a set of minimum technology requirements for a successful mobile device program, and a detailed wireless assessment aimed at improving District infrastructure to the requisite level.

This plan includes a sequencing strategy correlated to successive bond sales of Measure “K” and has been designed to effectively implement a true 1:1 computer-to-pupil ratio in District classrooms over time. Proceeds from the first bond sale will fund the first 4-year phase of the program, of which the first stage provides for the infrastructure upgrades, facilities improvements, and staffing allocations necessary to create a foundation for a successful project. Stage 2 focuses on deploying advanced mobile devices to all teachers and students at the middle school level, a program that will test and inform later iterations of program deployment. Stages 3 and 4 will implement the mobile technology program at the high school level to all students and teachers, and at the elementary school level in a 1:1 format for grades 4 and 5, and in a “small group” format for grades K-3. Initial implementation will provide a foundation for subsequent efforts to establish a model that allows students to take devices from school to home and back, as they do with traditional textbooks. The specifics of these deployment stages may vary according to info gathered from the pilot, device selection and district needs. Scheduled program implementation, combined with a planned refresh of the devices with the next successive bond sale, will ensure long-term sustainability of the program.

One of the most vital aspects of this plan is the professional development program, which pervades all stages and elements of the process. Purchasing new mobile devices, upgrading infrastructure, and altering the District’s curriculum are all important steps, but all of these strides forward will be for naught without adequately trained educators that are able to reap the full benefits of new technology. This plan lays out a schedule of multi-faceted, sustained professional development – supported by key District staff – that will be tailored for the individual needs of each participant in the program. The District’s professional development program will have two main goals.
The first is to establish a base level of technical proficiency for District teachers, administration and staff, ensuring that all classrooms benefit equally from the investment in technology, and that all teachers are equipped to use, maintain, and upgrade their classroom device. Second, and perhaps the most important, is the goal of giving teachers the tools, knowledge and resources to take full advantage of new devices in their daily curriculums, allowing devices to have the greatest impact on increasing academic achievement and refocusing energy on the actual learning of the student.

Deployment of mobile devices to students must be accompanied by careful and thorough integration with the District curriculum to shape instructional practices around new devices, and engage students in new ways with course material. This plan identifies specific curriculum goals and strategies for the District to reach those goals through new instructional methods and key factors that have been statistically shown to generate success in increasing academic achievement and creating transformative change in similar districts. In order to be successful, a plan for technology implementation must consider the importance of the planning process to be as significant as the outcome of the plan itself. A series of five conferences with the District’s Technology Advisory Committee (TAC) formed an essential part of the community information and outreach segment of the planning process. These focused meetings were held to gather and compile feedback, questions, and expectations from District teachers, administrators, parents, and interested community members. Concurrently, the District’s planning team worked to curate data, input, and feedback from District stakeholders, and relate these needs and expectations with current research and analysis from local and national technology leaders, comparable school districts, as well as case studies by leading technology providers.

The following plan describes policies, criteria, and established best-practices that should guide the implementation of the Measure “K” technology integration program. Each section recommends key actions that the District must take in a phased approach to successfully integrate mobile devices into the classroom. Accompanying this plan are detailed assessments for wireless network needs at each of the District’s nine campuses as well as a compilation of demographic data from the District to shape future purchasing decisions.

There is no question that the beneficiaries of this technology integration program are the current and future students at all nine Martinez school sites. Achieving program goals is contingent upon the execution of a disciplined implementation program on a very specific timeline. Continued and consistent planning along with communication between team members is critical. Participants in the process will find this plan to be an important point of reference in achieving the program goals, implementation methods, and establishing a process for continued improvement.
THE DISTRICT

The Martinez Unified School District (District) is located in Contra Costa County, approximately 25 miles northeast of San Francisco. At the time of publication, the District served 4,129 students in grades kindergarten through twelve and offered pre-kindergarten programs, before and after-school child care and enrichment programs, Regional Occupation Programs, and adult education programs.

The District continues to invest in programs to increase academic achievement and provide a high quality education to the local community. The District has experienced dramatic growth in its Academic Performance Index (API) over the past five years increasing the overall District API from 777 in 2007 to 832 in 2011. The District’s current score is well above the state’s stated objective of 800. The District is currently exploring options to increase access to technology in the classroom and leverage the wealth of programs and materials available in digital format for instructional use in order to continue the District’s success in preparing students for careers and educational opportunities after graduation.

1.1 DISTRICT VISION FOR TECHNOLOGY

Technology is critical to the District’s goals because of its capacity to support student achievement, transform the classroom, and support General Fund sustainability. When used appropriately, classroom technology can provide students and teachers with tools for dynamic exploration and representation of data and information, experimentation and problem solving, social and global awareness, independence, effective communication and collaboration, confidence, and a positive orientation to the future. However, District administrators and decision-makers must make concerted efforts to remember that technology is merely a means to enhance the education of students rather than an end in itself. Technology must be part of a multi-faceted curriculum that allows students and teachers to carry out the process of education in a powerful and effective manner.

The District envisions teachers as the key to the introduction, integration and infusion of technology into the curriculum and believes teachers must be supported by ongoing professional development and technical support. Teachers must be given the proper instruction and training to utilize technology to focus attention on the actual learning experience of the student - where it belongs - rather than on mundane processes, time-consuming troubleshooting, or administrative tasks. To ensure equal access to the potential benefits of new devices, all students must have many and varied opportunities to use technology, regardless of age, race, gender, religion, disability or social status.

To ensure that students in Martinez are prepared for success in the 21st century, parents, community members and district personnel must assume an active role in supporting the District to accomplish its vision of technology use. This plan will lay the foundation for successful investment and integration of technology solutions, but it is ultimately the District’s decision makers and stakeholders that will be responsible for the program’s success.
1.2 DISTRICT GOALS

The District has established a set of strategic focus areas for increasing student achievement. These focus areas were established as a complement to the District’s vision and goals for 2009-2012 and mainly seek to expand the impact of technology on learning while employing professional best practices, promoting continuous improvement in personnel, and creating environmentally sustainable schools. The Strategic Focus Areas for Increasing Student Achievement were adopted by the District Board of Education on April 11, 2011, and are included in Appendix A for reference. Within the District’s focus area on technology integration, the following core goals have been established:

- Increase student achievement across content areas by providing a reliable, sustainable framework to improve learning that instills our students with 21st century skills and strategies to compete and contribute in a global society
- Foster individualized, personalized and differentiated instructional practices that support inquiry-based and experiential learning, and performance-based assessment
- Promote the development of computer based literacy skills, higher-order thinking skills, problem solving skills and multi-media communication skills
- Enable, motivate and inspire all students to achieve regardless of background, language, or differences in abilities

Additionally, several key outcomes are expected from a comprehensive implementation of next generation learning technology:

- Prepare students to compete in a global work force by engaging them in research, collaboration and communication practices utilized in the professional world, such as wikis, blogs, digital content and other web resources.
- Extend learning for all of our students beyond the classroom walls
- Utilize the power of technology to aggregate real-time data to document learning and close the achievement gap
- Provide equitable, 24/7 access to all students and empower students in the ownership of their own learning
- Support the efficient and effective integration of technology through focused and differentiated professional development provided to teachers, staff, and administration
- Support the integration of technology in all content areas by establishing online learning communities using web based tools to share curriculum resources, instructional practices and assessments
METHODOLOGY & PROCEDURES

2.1 PLANNING METHODOLOGY

The District initiated this planning process in order to determine effective methods of integrating available digital media and mobile computing to transform the learning and teaching experience at local schools. An effective integration supports the District’s ongoing effort to increase academic achievement and better prepare students for the technologically advanced professional and collegiate environment of the 21st century. Data and information was gathered in order to assess the benefits and challenges of such a technology program focusing on three critical areas:

1. Student achievement
2. Transformation in the classroom by extending learning outside of school walls, and;
3. Sustainability of the General Fund

In the fall of 2011, the District initiated a technology pilot program at six school sites to assess instructional effectiveness and to determine direct and indirect costs associated with the deployment of mobile devices. Additionally, the District utilized an existing group of interested individuals, its Technology Advisory Committee (TAC), to address specific topic areas associated with the deployment of mobile devices throughout the District.

A central focus of this pilot program was to test the efficacy and feasibility of various mobile computing device solutions. In addition to deploying a 1:1 model in some classrooms, the District also piloted the effectiveness of deploying small group sets of devices in earlier grades. The District purchased 143 iPads, 115 netbooks, 31 2Go Classmates, and one Windows 7 touchscreen tablet and distributed them to a study group of teachers and students. Additionally, the District purchased a significant quantity of supporting hardware in the form of cases, carts, wireless access points, along with over 150 application programs for the devices. Teacher and student feedback continues to be collected and has been utilized to inform recommendations included within this plan.

The TAC was composed of approximately 25 members and included District staff, teachers, site administrators, students, Board of Education representation, and community members. The TAC met five times over the course of five months and discussed multiple aspects of a proposed District technology deployment. Members of the TAC expressed a strong need for professional development, increased technical support, additional time to develop a project-based curriculum, and integrated resources to better deploy and manage instructional materials. The topic areas discussed are summarized in Appendix E.
2.2 PRIOR DISTRICT TECHNOLOGY EVALUATIONS AND FINDINGS

Prior evaluations and findings were considered and incorporated into this plan in order to address previously identified needs by leveraging future technology investments. In 2010, the Board approved the Martinez Unified School District’s Education Technology Plan. The Technology Plan was written per the No Child Left Behind Act, which required districts receiving Enhancing Education Through Technology (EETT) grants and/or E-Rate funding to write a technology implementation plan to measure the effects of upgraded technology. The District’s plan covered a three year time period from July 1, 2010 through June 30, 2013.

The technology plan included a few general goals for technology integration. The District seeks to expand existing technology use and implement new forms of technology to foster communication and provide equitable access to learning and teaching tools for the entire community. The District will also strive to implement Professional Learning Communities on all sites to support increased student achievement and work to provide expert feedback and evaluation to all District staff.

Some key curriculum goals of the District’s technology plan are to:

- Use technology to empower students to communicate effectively, be critical thinkers, problem solvers and life long learners.
- Utilize data to inform and improve the instructional program. This includes the implementation of a data management system to provide frequent reports regarding student progress towards standards mastery.
- Support the implementation of new adoptions, which utilize technological resources such as, online assessments. E-books, lesson planning resources, virtual labs and support of English Language Learners.
- Provide support for students in meeting the educational demands of the California High School Exit Exam in both English Language Arts and Math.
- Improve literacy skills through the use of a balanced reading program including computer programs that assist in skill development, opportunities to use on-line resources for reading, and appropriate evaluation and assessment tools that drive reading instruction.
- Improve mathematics and problem solving skills through the use of diagnostic and prescriptive teaching and learning software.
- Enhance student learning and address state content standards in all curricular areas through the use of multimedia presentation tools.
- Use technology to access online information to expand problem solving, decision making and critical thinking skills.
CURRICULUM OBJECTIVES AND ASSESSMENT CRITERIA

Technology has the potential to fundamentally change the way students learn and interact with the content and skills they are learning. This plan incorporates a clear set of goals for classroom and curriculum transformation as a result of deeper technology integration. The following section outlines the need to transition to a digital learning environment as well as provides the District’s curriculum goals and a set of standards for student achievement with technology, taken from the International Society for Technology in Education (ISTE).

3.1 THEMES IN 21ST CENTURY TEACHING AND LEARNING

At a time where the landscape of education is changing, the integration of technology in District classrooms could not be more timely or relevant.

In August 2011, State Superintendent Tom Torlakson released a report entitled A Blueprint for Great Schools. This report provides an overarching vision and direction for California’s educational system. In this report the first key principle for schools is to “take into account the changing demands of a 21st century knowledge-based, technology-driven economy and society.”

The emphasis on 21st Century Teaching and Learning goes well beyond state boundaries. In December 2010, California joined 48 other states in the adoption of the Common Core State Standards (CCSS). These national standards reflect a growing understanding that it is critical for students to leave high school prepared to participate in a global economy. In creating the CCSS, foundational standards for College and Career Readiness (CCR) were used as a starting point.

The CCSS were designed to be robust and relevant to the real world, reflecting the knowledge and skills that young people need for success in college and careers. Within the CCSS we find that there are several major shifts from current educational practice. Some key shifts include new emphasis around:

- Critical thinking skills
- Informational & expository texts
- Problem solving, especially in the area of mathematics
- Writing across the curriculum, not solely in Language Arts
- Specific academic vocabulary
Instead of standards which focus on a discrete set of skills, the CCSS represent the need for students to synthesize information and demonstrate their understanding in a broader, real-world context.

The Partnership for 21st Century Skills is a national organization that advocates for 21st century readiness for every student. In its “Framework for 21st Century Skills,” it outlines four learning and innovation skills that all students will need to succeed in a global economy. These 4Cs are:

- Critical thinking and problem solving
- Communication
- Collaboration
- Creativity and innovation

Finally, students themselves are changing. Students of today, the so-called “Millennial” generation, represent an exciting challenge for today’s educator. The average millennial is a digital native – a child born after the widespread implementation of digital technology. To the digital native, technology is not an add-on, it simply is. To ask students to continually “power down when they come to school,” is to essentially remove them from an environment where they feel comfortable and engaged, and is counterproductive to the education of the next generation of students.

The District’s educators follow a moral imperative to give their students the best possible opportunity for success, both in school and beyond. The technology integration initiative represents a critical component in the transition of District schools to 21st Century teaching and learning environments. With the District’s students fully prepared for the future, the community will be best positioned to compete successfully in the global economy.

### 3.2 THE EXPLORATION OF DIGITAL TEXTBOOKS

On a parallel path with the movement towards adopting the CCSS and making 21st Century Teaching and Learning possible is the increasing availability of customizable online course content and digital textbooks. Previously the digital textbook industry was largely focused on the college market, but in the near future, transitioning to digital textbooks at the K-12 level will offer potential gains for the District in cost savings, customization, and even the weight of student backpacks.

Early digital textbooks were little more than scanned versions of the paper text. Modern digital textbooks incorporate interactive components such as video lessons and simulations, diagnostic tests and quizzes, and other collaborative components which have opened up a new world of possibilities for educators. In 2009 Governor Arnold Schwarzenegger launched a digital textbook initiative to provide students and teachers with free, high-quality open textbooks aligned to California content standards. Over 40 textbooks have been reviewed by the California Learning Resource Network so far. The CK-12 foundation, a non-profit organization with a mission to reduce the cost of textbook materials, offers nearly 100 “flexbooks”, digital textbooks which can be modified by teachers to fit their course structure and content.

As the digital textbook industry continues to evolve, the district will work to ensure that time for transition from traditional paper texts (and the study skills students have honed while learning on such materials) to digital texts is
measured and thoughtful. When appropriate, opportunities will be offered to teachers who are interested in pioneering initial versions.

3.3 ISTE STANDARDS

It is important to establish a set of guiding principles for integration of mobile technology into the District’s curriculum. The following section provides a base set of standards for student achievement with technology, taken from the International Society for Technology in Education (ISTE).

3.3.1 CREATIVITY AND INNOVATION:

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students:

1. Apply existing knowledge to generate new ideas, products, or processes.
2. Create original works as a means of personal or group expression.
3. Use models and simulations to explore complex systems and issues.
4. Identify trends and forecast possibilities.

3.3.2 COMMUNICATION AND COLLABORATION

Students use digital media and environments to communicate and work collaboratively from home and at school, to support individual learning and contribute to the learning of others. Students:

1. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
2. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
3. Develop cultural understanding and global awareness by engaging with learners of other cultures.
4. Contribute to project teams to produce original works or solve problems.

3.3.3 RESEARCH AND INFORMATION FLUENCY

Students apply digital tools to gather, evaluate, and use information. Students:

1. Plan strategies to guide inquiry.
2. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
3. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
3.3.4 CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. Students:

1. Identify and define authentic problems and significant questions for investigation.
2. Plan and manage activities to develop a solution or complete a project.
3. Collect and analyze data to identify solutions and/or make informed decisions.
4. Use multiple processes and diverse perspectives to explore alternative solutions.

3.3.5 DIGITAL CITIZENSHIP

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. Students:

1. Advocate and practice safe, legal, and responsible use of information and technology.
2. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
3. Demonstrate personal responsibility for lifelong learning.
4. Exhibit leadership for digital citizenship.

3.3.6 TECHNOLOGY OPERATIONS AND CONCEPTS

Students demonstrate a sound understanding of technology concepts, systems, and operations. Students:

1. Understand and use technology systems.
2. Select and use applications effectively and productively.
3. Troubleshoot systems and applications.
4. Transfer current knowledge to learning of new technologies.

3.4 DISTRICT FOCUS AREAS

The District has identified four secondary level focus areas for exploration during a 1:1 mobile computing implementation. In crafting these focus areas, the tenets of 21st Century Teaching and Learning, College and Career Readiness, CCSS and ISTE were used as anchors. The four areas are as follows:

- Online Assessment
  
  Within the identified online Learning Management System, teachers will use the diagnostic and prescriptive tools that are available. This will allow teachers to deliver formative and summative assessments and receive instant, diagnostic results and data analysis to inform their teaching.
• **Project Based Learning**

The goal of project based learning is for students to synthesize what they have learned and apply it in a real-world context. This type of learning encourages students to demonstrate creative thinking, construct knowledge, collaborate, and display innovation.

• **Communication and Collaboration**

Students and teachers will be encouraged to explore the use of online collaborative tools, such as blogs, wikis, and social media.

• **Digital Citizenship & Cyber Safety**

With this new frontier comes an increased responsibility for educators to explicitly teach students the skills needed to safely navigate cyberspace. In addition to basic skills instruction, students need guidance and information related to appropriate use and conduct.

### 3.5 ADDITIONAL TECHNOLOGY INTEGRATION POSSIBILITIES

Beyond the focus areas listed above, technology integration represents a virtually endless wealth of possibilities to connect students to the world. As teachers and students explore and refine the focus areas above, new possibilities and benefits in integration will continue to emerge:

#### 3.5.1 COMMUNICATION AND COLLABORATION

- Strengthening of the home-school connection through more frequent, efficient communication tools
- Parent ability to monitor students’ progress immediately
- Student data systems and diagnostic programs that can provide real-time teacher, student, and parent feedback

#### 3.5.2 INSTRUCTION

- Teachers are able to provide differentiated learning environments
- Student participation in virtual field trips and other real-world simulations
- Exploration of the “flipped” classroom – in this structure, students are able to view the teacher’s lesson as homework, and apply the lesson during class time. This model also allows the teacher to deliver more individualized instruction and guidance.
- Blended classroom environments
- Implementation of an online Learning Management System
3.5.3 STUDENT OWNERSHIP OF LEARNING

- Ability for students to track their own progress, set goals
- Ability for students to synthesize information and create presentations using multimedia tools
- Students collaborate with peers, seek out resources, and make connections in the course of their research
- The “flipped” classroom (see above) allows for students to set the pace of their own learning, reviewing material as much as necessary and asking questions in a safe environment

3.5.4 OPERATIONAL EFFICIENCY

Overall, technology integration has possibilities for the increased operational efficiency of classrooms and sites, including:

- The storage and retrieval of information
- Decrease in use of paper
- Grading, attendance, and progress monitoring

3.5.5 APPLICATIONS FOR SPECIAL EDUCATION SETTINGS

Through the pilot program, particularly promising application of 1:1 computing devices – in this case, iPad tablets – in Special Education Classrooms has been observed. In a Special Education setting, students’ learning is driven entirely by their Individualized Education Program (IEP), thus the learning of every student at virtually every moment is differentiated to each child’s specific needs. Many of our students have issues with motor or speech function, and the iPad interface is particularly suited to their learning styles and needs. Because of the iPad’s ability to provide individualized, diagnostic instruction with a touchscreen interface, they have been seamlessly incorporated into our special education settings.

3.6 PILOT PROGRAM ASSESSMENT AND DEVICE DEPLOYMENT METRICS

In the fall of 2011, the District initiated a pilot program to test the efficacy and implementation strategy of various computing deployment methods. In addition to deploying a 1:1 model in some classrooms, the District also piloted the effectiveness of deploying small group sets of devices in earlier grades. The District purchased 143 iPads, 115 netbooks, 31 2Go Classmates, and one Windows 7 touchscreen tablet and distributed them to a study group of teachers and students. Additionally, the district purchased a significant quantity of supporting hardware in the form of cases, carts, wireless access points, along with over 150 application programs for the devices. The cost total for hardware and software was $190,000.

Prior to the launch of the pilot, the District collected a great deal of information around the implementation practices of other school districts both in person and through published research (see Appendix F, Prevailing Research and Works Consulted). A meta-analysis of the studies shows that in school districts where there was no measureable gain in student achievement, certain critical errors are commonly found:
• The success of the initiative is defined by student access and engagement which, although is an important factor, does not address the core goals of effective educational practices or measurable increases in student achievement.

• Devices are provided to teachers with little direction or support in implementation. Teachers are expected to learn through trial and error and exploration only.

• A lack of administrative, community understanding, and support around the initiative.

• An underestimation of the amount of time, training, and professional development needed to transform an organization and to truly integrate technology into an instructional program.

The factors outlined above were critical to the creation of the pilot phasing and the creation of this plan. In the first phase of the pilot, the main goal was to measure the feasibility of the implementation by deploying devices across a variety of settings, age levels, sites, and content areas. Though data was gathered and continues to be gathered around student achievement, it is the goal of the District to substantially increase quantifiable data collection in the expansion phase of the pilot, once focus areas have been established.

At the end of the pilot phases, the data collected is intended to allow the District to evaluate how various deployment methods and various devices aid in transforming the traditional learning environment, allowing teachers to use powerful new evaluation and teaching tools, and providing collaborative opportunities for students to work, learn, and grow together.

**PILOT PROGRAM ASSESSMENT: 2011-12 INITIAL DEVICE EXPLORATION**

This phase of the pilot is considered an exploration phase. Teachers were given great latitude in determining how to best utilize the devices in their classrooms. The purpose of this pilot was to expand the District’s own vision of technology integration through real world application in District classroom settings.

<table>
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<tr>
<th>Goal</th>
<th>Expected Outcomes</th>
<th>Data Collection Method</th>
</tr>
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| Provide Proof-of-concept    | • Demonstrate that devices provide an effective and efficient learning tool for the intended use  
  • Identify costs for additional equipment, software, support, licenses, etc. which were not apparent in the planning process  
  • Generate any necessary changes in policies, procedures, training and support mechanisms that should be addressed prior to a larger deployment | • Teacher Logs: frequency, type, and method of device usage  
  • Support Logs: record of device issues and troubleshooting needs (including time spent addressing issues)  
  • Student, Parent, Teacher Surveys  
  • Notes & Feedback from Stakeholder Meetings  
  • Direct Observation |
| Measure Impact on Student Achievement | • Identify the methods and uses which have the greatest positive impact on student learning  
  • Begin to align learning objectives with appropriate tools/devices  
  • Utilize data gathered to create learning objectives/focus areas to define pilot expansion and full deployment | Multiple Measures of Student Assessment Data  
  • CST  
  • Formative and Summative  
  • Student attendance  
  • Discipline  
  • Student, Parent, Teacher Surveys |
A primary goal of the 2011-12 pilot was to establish **proof of concept**. Proof of concept helps determine viability, technical issues and overall direction, as well as providing feedback for budgeting and other forms of internal decision making processes. In this case, analysis of device use on a small scale allowed the District to determine what issues may arise prior to investing in a full scale deployment.

At the initial summer training, teachers involved in the pilot program were asked to create SMART goals. A SMART goal is: **Specific & Strategic, Measureable, Attainable, Results oriented, and Timebound** (see Appendix C, Sample SMART Goals and Teacher Survey Tool). In crafting their SMART Goals, teachers were also required to select a “control group” in order to have another set of students to compare with data collected from the pilot. In addition, teachers were asked to keep a log of how often devices were used.

To date, the District has found a great variance in teacher pilot data. This is to be expected, as with the implementation of any new technology there is always a period of time needed for teachers and students to become familiar with the equipment before integration can begin.

Though complete pilot data is still being collected and analyzed, the District has used information from the past months to inform decisions around this plan and around future expansion of mobile 1:1 computing. The methods of data collection outlined on the previous page were used to inform the decisions outlined below.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Decisions to Date</th>
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<tbody>
<tr>
<td><strong>Proof of Concept</strong></td>
<td>• Viability of 2GoClassmates in an elementary setting</td>
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<tr>
<td></td>
<td>• Configuration around syncing devices</td>
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<tr>
<td></td>
<td>• Strategies for device distribution</td>
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<tr>
<td></td>
<td>• Hardware and Management decisions: cases, carts, keyboards, etc.</td>
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<td></td>
<td>• Change in the Netbook operating system from Windows to Linux</td>
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<tr>
<td></td>
<td>• Need for review of governing policies related to: digital textbooks, online learning, acceptable use policies, etc.</td>
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<td></td>
<td>• Questions around purchase of apps from iTunes</td>
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<tr>
<td></td>
<td>• Level of need for flash</td>
</tr>
<tr>
<td></td>
<td>• Extent to which current software/programs can be run on the devices</td>
</tr>
<tr>
<td><strong>Measure Impact on Student Achievement</strong></td>
<td>Identification of four Learning Focus Areas for Secondary</td>
</tr>
<tr>
<td></td>
<td>Initial discussion around focus areas for Elementary education</td>
</tr>
<tr>
<td></td>
<td>Application of devices for:</td>
</tr>
<tr>
<td></td>
<td>• individualized instruction in Special Education</td>
</tr>
<tr>
<td></td>
<td>• application in an elementary and secondary setting</td>
</tr>
<tr>
<td></td>
<td>• use in an independent study take-home model</td>
</tr>
</tbody>
</table>

**PILOT PROGRAM ASSESSMENT: 2012-13 INCREASED STUDENT ACHIEVEMENT AROUND LEARNING GOALS**

In this phase of the Technology Integration Initiative, it is appropriate for the District to begin collecting substantially more quantifiable student achievement data around identified focus areas, and around device use. Below are the identified focus areas and the data which will be collected in the 2012-13 School Year. Teachers will again be asked to identify control groups for comparison purposes.
<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Quantifiable (“Hard Data”)</th>
<th>Anecdotal (“Soft Data”)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Online Assessment</strong></td>
<td>• Frequency of Online Assessment Administration</td>
<td>• Student Surveys</td>
</tr>
<tr>
<td></td>
<td>• Analysis of Online Assessment Results</td>
<td>• Teacher Survey Tool (See example, Appendix C)</td>
</tr>
<tr>
<td></td>
<td>• Comparison of time spent creating &amp; grading paper assessments vs. creating online assessments</td>
<td>• Notes from Teacher Collaborative Time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Parent Surveys</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Student, Teacher Observations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Direct Observation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Feedback from Stakeholder Meetings</td>
</tr>
<tr>
<td><strong>Collaboration and Communication</strong></td>
<td>• Percentage of Students participating in open communication forums</td>
<td>• Online Assessment Administration</td>
</tr>
<tr>
<td></td>
<td>• Homework completion rates</td>
<td>• Analysis of Online Assessment Results</td>
</tr>
<tr>
<td></td>
<td>• Review of collaboratively created teacher content</td>
<td>• Comparison of time spent creating &amp; grading paper assessments vs. creating online assessments</td>
</tr>
<tr>
<td></td>
<td>• Review of collaboratively created student content</td>
<td>• Student Surveys</td>
</tr>
<tr>
<td><strong>Project Based Learning/ Real World Application</strong></td>
<td>• Assessment information on Performance Tasks (SBAC, MMARS,)</td>
<td>• Teacher Survey Tool (See example, Appendix C)</td>
</tr>
<tr>
<td></td>
<td>• Rubric Scores: used directly/adapted from Project Based Learning (<a href="http://www.PBLchecklist.4teachers.org">www.PBLchecklist.4teachers.org</a>**)</td>
<td>• Notes from Teacher Collaborative Time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Parent Surveys</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Student, Teacher Observations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Direct Observation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Feedback from Stakeholder Meetings</td>
</tr>
<tr>
<td><strong>Digital Citizenship/ Cyberbullying</strong></td>
<td>• Cyberbullying Student Needs Assessment Survey ** (anonymous of Data Director, administered as baseline and post test)</td>
<td>• Online Assessment Administration</td>
</tr>
<tr>
<td></td>
<td>• Record of MUSD Reporting</td>
<td>• Analysis of Online Assessment Results</td>
</tr>
<tr>
<td><strong>Additional Data</strong></td>
<td>• Student attendance data</td>
<td>• Comparison of time spent creating &amp; grading paper assessments vs. creating online assessments</td>
</tr>
<tr>
<td></td>
<td>• Student discipline data</td>
<td>• Student Surveys</td>
</tr>
<tr>
<td></td>
<td>• Comparison of Formative &amp; Summative Assessment Results (CST, district benchmarks, teacher &amp; publisher created)</td>
<td>• Teacher Survey Tool (See example, Appendix C)</td>
</tr>
</tbody>
</table>

**ADDITIONAL OPERATIONAL CONSIDERATIONS**

In addition to the data listed above, in order to address the long term sustainability of the program, the District must also collect information around the following:

- **Copy machine/printing cost** – Collect current costs by teacher and measure changes to determine if reduced for teachers using mobile devices

- **Administrative paperwork** – Assess the potential for paperwork to be communicated through email, online documents, and interactive surveys; measure the extent of paperwork that is conducted electronically versus by paper

- **Use of online or digital classroom materials** – Compare costs of traditional physical materials and measure extent of these offset by digital alternatives

- **Use of digital textbooks** – Measure class time spent using free or reduced cost digital textbook alternatives over standard textbooks; collect information from students on time spent at home using both
traditional and digital alternatives; consider cost savings for future textbook adoption cycles

- **Power use** – Estimate current power costs associated with supporting desktop computing infrastructure; continue to estimate power costs over time, and consider impact of mobile device power use over desktop computer power use

- **Space** – Observe current classroom space reserved for desktop computer use; measure space savings that occurs over time as mobile devices replace desktop computer

- **Loss or damage** – Measure number of devices lost or damaged during each semester or academic year to determine sustainability of program
PROGRAM REQUIREMENTS

In implementing a technology solution, the District’s prime focus should not be on the device. The device is a means to an end – to achieving equitable access and connectivity to the materials, collaborative spaces, and curriculum content that students need to be successful. This section provides a base level of physical and technical requirements for the devices that will enable the District to concentrate resources where they belong: the actual learning experience of the student.

4.1 MINIMUM PLATFORM REQUIREMENTS TO ACHIEVE CURRICULUM OBJECTIVES

- **Mobility:** Mobile solutions like laptops, netbooks, and tablets have several advantages over desktops, including their smaller size, wireless internet access, and extended battery life. Additionally, portable computers are more versatile in a spatial sense than desktop computers; with portable computers, any space can quickly and effectively be transformed into an interactive and adaptable workspace and students have the ability to take their mobile device home at the end of each school day.

- **Battery life:** The minimum battery life for all classroom mobile devices should support 7 hours of use at full power. Without an adequate battery life, the device may lose charge at inopportune times during the school day, lessening its reliability and the efficiency of classroom instruction.

- **Wireless Broadband:** Efficient use of tablet computers is only possible with a full wireless solution. Devices must have full wireless broadband capability and all District school sites must be outfitted with a robust broadband wireless network with enough bandwidth capacity to support future growth.

- **Software:** Mobile devices purchased by the District should be capable of editing, exporting, and printing common word processing, spreadsheet, and presentation file formats. Mobile devices should also be compatible with the District’s current inventory of digital and online resources. Additional functionality such as e-book capabilities or downloadable applications should also be considered.

- **Audio/Video and Memory Capabilities:** All devices purchased by the District should be capable of recording audio and video, as well as facilitating audio and video input and output. Project-based learning that takes advantage of audio and visual presentation activities has been shown to engage students at greater depth and allows educators to target differentiated learning approaches.

**ACTION STEPS: MINIMUM PLATFORM REQUIREMENTS**

4.1a – Internal Device Selection: Using the minimum platform requirements listed in this plan, District administrators will select vendors, conduct negotiations, and sign a contract with selected technology firms to arrange for the purchase of mobile devices and supporting technology.
Continuous personal access to a computing device and broadband internet dramatically expands the instructional resources available to students. A growing library of free curriculum supporting videos, presentations, podcasts, apps, and games provide educators with greater flexibility in using online media to support their lessons. Without broadband internet access from home, students cannot easily and reliably reach these materials outside of school. The lack of broadband similarly reduces student ease of access to a district’s Learning Management System, decreasing the availability of course content and progress reports. But home broadband access is far from universal – nearly one third of Americans, or 100 million people, have yet to adopt broadband technology in their residence. Amongst low income families, minority groups and elderly or rural populations, this inequality is even more pronounced, with fewer than 50% of households having achieved broadband connectivity from home. Some key barriers to access are low levels of digital literacy and the relatively high cost of an internet subscription.

This plan recommends that the District evaluate options and methods for improving student internet connectivity. Several opportunities exist to expand student access to broadband internet access outside of normal instructional hours. These include:

- **Reduced price broadband services**
  
  Through a partnership between the FCC and local broadband service providers, the "Connect to Compete" program offers families broadband internet access at home for only $9.95 per month + tax, with no installation/activation fee and no modem rental fees for eligible families who have at least one child receiving free school lunches through the Free and Reduced Price Meals Program (FRPM). An expansion of this program is anticipated that broadens qualifications to include families with at least one child receiving reduced price lunches through FRPM. Information about this and similar programs offered by local cable providers should be disseminated to parents with robocalls, mailings, or take-home handouts.

- **Free afterschool access**
  
  The District should investigate best practices and options for providing access to computing resources through afterschool programs.

- **Free community access**
  
  There currently exists a plethora of often overlapping wireless networks that are offered free of charge by local businesses like coffee shops, restaurants, book stores, libraries, community centers etc. The District should reach out to businesses and community venues that offer free wireless internet access close to school sites and seek partnership arrangements that capitalize on this available resource.

Through a combination of reduced price home internet subscriptions, after school programs geared at expanding access beyond school hours, and joint ventures within the local community to better promote free wireless access for students, the District can ensure that more students maximize the full potential of existing and future technology resources to support learning.
ACTION STEPS: EXPANDED BROADBAND ACCESS

4.2a – Communicate information regarding reduced-price broadband: The District should notify parents or guardians of children at area schools of the opportunity to receive a discount on home broadband access.

4.2b – Investigate afterschool on-site internet access opportunities: The District shall investigate methods for allowing students without broadband at home to access the network on one or more school facilities in the District with the goal of increasing equality of access to the network.

4.2c – Investigate free wireless options: The District should actively partner with local businesses and organizations which provide wireless access to allow free service to students enrolled in Martinez schools.

4.3 LEARNING MANAGEMENT SYSTEMS

4.3.1 CURRICULUM NEEDS OF AN ONLINE LEARNING MANAGEMENT SYSTEM

An Online Learning Management System (LMS), also referred to as a Course Management System (CMS), provides a structured framework for digital lesson delivery in a blended learning environment. By employing an LMS, District schools can provide student access to a wide variety of digital learning materials. This can include posted documents, recorded video lessons, links to Internet-based learning resources or many other types of materials, all of which students access in a guided, sequential format. Teachers can track student progress and time spent on task, and conduct online assessments to test for understanding.

An LMS is essential to allowing students to engage in self-paced learning in the classroom, and can also be used to provide 24/7 access to learning resources. The LMS allows teachers to collaborate on the digital content that they use in the classroom. While the District will primarily be using the LMS for a blended learning environment, it also has potential for delivery of online courses such as the Plato LMS’s current use in the Virtual Academy.

4.3.2 ESSENTIAL FUNCTIONS OF AN ONLINE LEARNING MANAGEMENT SYSTEM

- Compatibility with SCORM technical standards to allow the use of pre-created lessons and courses, and to enable collaborative creation of online courseware
- Student progress tracking
- Delivery of online assessments
- Automatic grading and grade tracking
- Compatibility with tablet platforms
- Web-based for 24/7 access
- Online discussion forums
- Drop box for turning in assignments
- Integration with district’s student information system
### ACTION STEPS – LMS EVALUATION

4.3a – Internal LMS selection process: The District, using the minimum LMS functionality guidelines detailed in this plan, will conduct an internal review of vendor offerings, select a product for testing in District classrooms, and integrate the new system with the emerging technology-based curriculum.

### 4.4 INTEGRATION OF EXISTING INVENTORY OF TECHNOLOGY

With the exception of the devices being deployed in the technology pilot classrooms, the District’s current inventory of computing devices consists primarily of desktop and laptop computers. This current inventory of devices is optimized and configured to utilize currently available digital, interactive, and online resources provided by textbook publishers and other vendors as additional instructional materials. Additionally, the District employs a number of learning software suites across the District to aid in instruction. Many of these resources and programs rely heavily on the Adobe Flash programming architecture to provide interactive and multimedia learning resources.

The District must consider the compatibility of any mobile device or future technology investment with the District’s current inventory of digital, interactive, and online resources in order to leverage the District’s past investments as well as leverage lesson plans and digital content already integrated into the curriculum. Where incompatibilities exist, the district must be prepared to provide alternative content and professional development on its use and integration to the curriculum.

#### 4.4.1 CLASSROOM COMPUTER INVENTORY BY SITE

An inventory of existing District technology resources was provided for this plan in January 2012. A little more than half of the District’s current installed base of classroom computers is four years old or greater. The quantity, location, and type of technology equipment currently deployed is summarized in the chart below.

<table>
<thead>
<tr>
<th>School Site</th>
<th>Classrooms</th>
<th>Classroom Computers</th>
<th>Classroom Computers</th>
<th>Total Classroom Computers</th>
<th>Smartboards</th>
<th>Document Cameras</th>
<th>Classroom Clicker Sets</th>
<th>Classroom Projectors without Smartboards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Less than 4 Years Old</td>
<td>4 Years Old or Greater</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Las Juntas Elementary</td>
<td>22</td>
<td>164</td>
<td>49</td>
<td>213</td>
<td>18</td>
<td>11</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>John Muir Elementary</td>
<td>27</td>
<td>51</td>
<td>85</td>
<td>136</td>
<td>21</td>
<td>18</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>John Swett Elementary</td>
<td>23</td>
<td>68</td>
<td>93</td>
<td>161</td>
<td>20</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Morello Park Elementary</td>
<td>30</td>
<td>111</td>
<td>106</td>
<td>217</td>
<td>21</td>
<td>19</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Martinez Junior High</td>
<td>39</td>
<td>100</td>
<td>167</td>
<td>267</td>
<td>34</td>
<td>22</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Alhambra High</td>
<td>62</td>
<td>294</td>
<td>181</td>
<td>475</td>
<td>12</td>
<td>45</td>
<td>4</td>
<td>41</td>
</tr>
<tr>
<td>Vincente Martinez High</td>
<td>6</td>
<td>35</td>
<td>10</td>
<td>45</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Briones</td>
<td>2</td>
<td>13</td>
<td>9</td>
<td>22</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Martinez Junior High</td>
<td>25</td>
<td>18</td>
<td>166</td>
<td>184</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>236</strong></td>
<td><strong>854</strong></td>
<td><strong>866</strong></td>
<td><strong>1720</strong></td>
<td><strong>133</strong></td>
<td><strong>123</strong></td>
<td><strong>13</strong></td>
<td><strong>41</strong></td>
</tr>
</tbody>
</table>
Following the purchase and deployment of new mobile devices, all District schools should perform an updated inventory of existing technology resources, specifically taking into account the age and expected lifespan of each device. This document will form the basis for making decisions on what machines to repurpose, and which to sell or donate.

After a mobile device deployment has taken effect at all grade levels, schools will perform an audit of computer lab usage. Some labs, such as the high school lab used for CAD instruction, contain specialized equipment or software and will continue to be necessary in a mobile environment. Other labs, such as those used for basic computer instruction, may become less frequently used. Following this audit, District administration may repurpose newer machines to fill gaps in available technology at lower grade levels.

**ACTION STEPS: INTEGRATION OF EXISTING TECHNOLOGY**

4.4a: Inventory technology: All schools will perform an inventory of existing technology resources, specifically taking into account the age and expected lifespan of each device. This document will form the basis for making decisions on what machines to repurpose, and which to sell or donate.

4.4c: Evaluate computer lab and classroom computer usage. Following the transition to a mobile computing-based curriculum, the District will perform an audit of computer lab usage. Some labs, such as the high school lab that is used for CAD instruction, contain specialized equipment or software and will continue to be necessary in a mobile computing environment. Other labs, such as those used for basic computer instruction, will be rarely used. Many classroom computers will no longer be needed.
PROFESSIONAL DEVELOPMENT STRATEGY

Technology integration requires sustained support and ongoing, responsive professional development for all staff. The need for professional development and technical training was strongly expressed throughout the District’s planning process, pilot program, and Technology Advisory Committee meetings. To address this need, the District’s staff has developed a professional development strategy to support the District’s technology integration program. The vision for this plan is to create a support structure that builds the internal capacity and foundational skills needed to integrate technology for increased student achievement.

5.1 PROFESSIONAL DEVELOPMENT PROGRAM

5.1.1 STRUCTURE

This professional development structure ensures that teachers, administrators, and other staff members will receive differentiated training in the technical uses of the device, as well as in its instructional applications.

This model aims to provide multiple layers of support to staff though several formats: online training modules will allow teachers to access training 24/7, and will have time built in for teachers to apply what they have learned in their classrooms. Large group, small group, and individual coaching sessions that are tailored to skill level will also be offered. A Summer Academy program is planned that offers technical training, instructional training around the four focus areas, and time for teachers to collaborate on lessons and unit plans.

Training will be woven into the existing professional development schedules, and teachers will be compensated for some time spent using and applying training modules.

<table>
<thead>
<tr>
<th>Support Component</th>
<th>Purpose</th>
<th>Details</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Modules</td>
<td>• Increase understanding &amp; application in identified focus areas of technology • Allows time for application/ integration</td>
<td>• Provide 24/7 access to teachers • Short, focused, interactive modules • Time &amp; support built in for application</td>
<td>• Option will also be open to Paraeducators (excluding the Paraeducator B classification)</td>
</tr>
</tbody>
</table>
5.1.2 PERSONNEL

Multiple layers of support also exist in the staff responsible for the technology integration initiative. Pending Board approval, a Site Technology Liaison will serve as the first layer of technological and instructional support for each school site. Pending Board approval, an Educational Technologist will oversee the deployment of 1:1 mobile computing devices at the site, design, facilitate, and implement professional development to staff and parents, provide coaching, and facilitate the Site Technology Liaison program.

At the District Office, the Director of Technology and Coordinator of Educational Services will work closely with the Educational Technologist to carry out the technology integration plan across all sites K-12. The existing Technology Advisory Committee (TAC), a board level committee, will continue to serve to report, reflect upon, and offer guidance about the progress of the initiative.
<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Director of Technology</strong></td>
<td>Oversee implementation of all devices, hardware and software</td>
</tr>
<tr>
<td></td>
<td>• Oversee hardware/software</td>
</tr>
<tr>
<td></td>
<td>• Manage technical side of 1:1 Implementation</td>
</tr>
<tr>
<td></td>
<td>• Interface with Coordinator, Educational Services</td>
</tr>
<tr>
<td><strong>Coordinator, Educational Services</strong></td>
<td>Oversee and support K-12 technology integration, instructional focus</td>
</tr>
<tr>
<td></td>
<td>• Oversee implementation and pilot expansion</td>
</tr>
<tr>
<td></td>
<td>• Support Educational Technologist in developing and delivering PD to teachers, liaisons, and administrators</td>
</tr>
<tr>
<td></td>
<td>• Interface with Director of Technology</td>
</tr>
<tr>
<td><strong>Coordinator, Bond Projects</strong></td>
<td>Oversee all aspects of funding related to and around Measure K</td>
</tr>
<tr>
<td></td>
<td>• Interface with the District’s financial advisor, CFW</td>
</tr>
<tr>
<td></td>
<td>• Interface with Tech Director re: hardware &amp; facilities decisions</td>
</tr>
<tr>
<td><strong>Educational Technologist</strong></td>
<td>Focus on support and facilitation of 1:1 implementation at Deployment Site, including professional development</td>
</tr>
<tr>
<td></td>
<td>• Develop &amp; deliver PD modules</td>
</tr>
<tr>
<td></td>
<td>• Parent Workshops/Outreach</td>
</tr>
<tr>
<td></td>
<td>• Support devices at site</td>
</tr>
<tr>
<td></td>
<td>• Coaching</td>
</tr>
<tr>
<td></td>
<td>• Train Site Technology Liaisons</td>
</tr>
<tr>
<td></td>
<td>• Ensure a smoothly running deployment and implementation</td>
</tr>
<tr>
<td><strong>Site Technology Liaisons</strong></td>
<td>Build internal site capacity and leadership in technology integration</td>
</tr>
<tr>
<td></td>
<td>• Calculated by # of devices per site</td>
</tr>
<tr>
<td></td>
<td>• The “go to person” at each site for basic troubleshooting</td>
</tr>
<tr>
<td></td>
<td>• Help to plan site specific staff development</td>
</tr>
<tr>
<td><strong>Site Administration</strong></td>
<td>Support integration of technology at sites</td>
</tr>
<tr>
<td></td>
<td>• Attend some trainings with Site Liaisons</td>
</tr>
<tr>
<td></td>
<td>• Provide time in staff meetings for Site Liaisons</td>
</tr>
<tr>
<td></td>
<td>• Attend administrator trainings</td>
</tr>
<tr>
<td><strong>Network</strong></td>
<td>Support and troubleshoot</td>
</tr>
<tr>
<td></td>
<td>• Provide support to all sites related to hardware and</td>
</tr>
</tbody>
</table>
### Specialization

<table>
<thead>
<tr>
<th>Specialists</th>
<th>Technology District Wide</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tech Specialists</strong></td>
<td>Provide site-based technology troubleshooting, work with students around technology skills</td>
<td>• Provide troubleshooting support at sites&lt;br&gt;• Teach skill-based technology lessons</td>
</tr>
</tbody>
</table>

* Pending board approval

### ACTION STEPS – PROFESSIONAL DEVELOPMENT PROGRAM

5.1a – Create Educational Technologist position: pending board approval, the District shall create and fill a District-wide position dedicated to supporting professional development, coaching and technology integration needs.

5.1b – Identify Site Technology Liaisons: the District shall identify a teacher at each school site that will serve as a leading technology educator for their school site, solving minor troubleshooting issues and aiding in professional development planning.

5.1c – Train network and technology specialists: the District, with guidance from the Director of Technology, Educational Technologist or Technology Liaisons, will train IT specialists in the tracking, upkeep, and administration of new devices.

5.1d – Schedule summer academy: the District, with guidance from the Coordinator, Educational Services, Educational Technologist or Technology Liaisons, will schedule 2 day workshops in June and August as device training sessions for teachers.

5.1e – Schedule large group training session: the District, with guidance from the Educational Technologist or Technology Liaisons, will schedule a large group training session at each school site for all teachers at that site.

5.1f – Schedule small-group or 1:1 training sessions: the District, with guidance from the Educational Technologist or Technology Liaisons, will work with teachers to schedule follow up trainings for small groups organized by subject area or grade level.

5.1g – Create online module system: the District, with guidance from the Educational Technologist or Technology Liaisons, will create a system of online training modules to give teachers 24/7 access to the materials necessary to successfully integrate technology into their daily instructional activities.
DEPLOYMENT RECOMMENDATIONS

The following section provides recommended phasing, sequencing, and implementation of technology deployment. These recommendations strategically implement technology improvements over time to generate maximum efficiency of deployment and effectively utilize available funding sources in each phase. Specific vendors, technicians, and contractors will need to be identified upon program implementation.

6.1 PHASING STRATEGY

Given the estimated timing of projected funding, the technology deployment must be phased over time. Below is a proposed phasing plan that assumes no additional funding beyond those made available by the District’s Measure “K” bond.

PHASE 1.1 LAUNCH – 2011-12 SCHOOL YEAR

The District launched its first phase of technology integration during the 2011-12 school year. The launch of the District’s technology integration program is separated into two components. So far, the 2011-12 school year has been dedicated to the successful implementation of a district wide pilot program. A primary goal of this program has been to identify the usefulness of various mobile devices in a variety of academic settings. Proof of concept has also been a focus of the launch effort.

The second component of the launch effort will be to provide adequate training and support for the staff of Martinez Junior High which is recommended to be the first site to implement mobile 1:1 computing devices, beginning in the 2012-13 school year. The steps necessary to expand the pilot program into a fully realized implementation of mobile devices at Martinez Junior High are outlined in Phases 1.2 and 1.3 below.

PHASE 1.2 PILOT EXPANSION – 2012-13 SCHOOL YEAR

District staff will make adjustments to the 2011-12 pilot program to reflect information gathered from the pilot, district-wide device decisions, and the identified focus areas. Though details are still being finalized by District administration, expansion of the pilot program will include:

- A large scale pilot at of mobile devices at Martinez Junior High School in preparation for full 1:1 mobile computing in the following school year
- Continued use of iPads for special education students and for small group instruction in all district schools
• One third through fifth grade teacher from each elementary school will pilot 1:1 computing using iPads and a mobile cart

• The Independent Study 1:1 model will be expanded to include all 15 students

• Additional sets of mobile computing devices will be available for check-out at Alhambra High School and Vicente

Phase 1.2 will also include the selection of the District’s Educational Technologist (pending board approval). Responsibilities will include:

• Technical and instructional training and support for Martinez Junior High School staff

• Selection, training and support to site technology liaisons who will provide the first tier of technical and curriculum support for teachers; the purpose of the liaison position is to build site capacity and leadership

• Work with the librarian and library media assistants to create a cyber-safety and Digital Citizenship curriculum for K-8 students

• Identification and/or creation of online learning modules for professional development for teachers, administrators and classified personnel

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**PHASE 1.3  GRADE 6-8 DEPLOYMENT 2013-14 SCHOOL YEAR**

• Intensive coaching and support will continue for Martinez Junior High School staff.

• Introductory technology integration will occur District-wide with the goal of increasing internal site capacity.

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**PHASE 1.4  EXPANSION OF 1:1 DEPLOYMENT 2014-15 SCHOOL YEAR**

• In the following years, the District will work to implement mobile 1:1 computing in all grades 4-12 and small group instruction with mobile devices in grades K-3. The devices will initially stay at school and a take-home system will be phased in gradually and as appropriate.

• Staff will continue to receive continued coaching and support.

• The deployment activities will be modified to reflect the information gathered during the previous phases as well as current best practices. The plan will be adjusted and modified according to the academic purposes and the current identified needs.

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**PHASE 1.5  EXPANSION OF 1:1 DEPLOYMENT 2015-16 SCHOOL YEAR**

• The District will continue implementing mobile 1:1 computing in all grades 4-12 and small group instruction with mobile devices in grades K-3.
• The program will be modified to reflect the information gathered during the previous phases as well as current best practices. The plan will be continue to be adjusted according to identified academic goals and needs.

FUTURE PHASES

Following the completion of Phase 1, future bond sales will fund refresh, replacement, or upgrades of the District’s mobile technology program. Phase 2 will begin following the next scheduled bond sale in approximately 2015 or 2016. The specific implementation and guidelines for Phase 2 will be informed by the outcome and evaluation process of Phase 1.

ACTION STEPS – PHASING STRATEGY

6.1a – Evaluate pilot program: the District shall conduct a detailed evaluation of the concepts, devices, and curriculum integration strategies tested during the 2011-12 pilot program (See example in Appendix C). Results from this evaluation will inform choices made during future phases.

6.1b – Phase 1.2 (2012-13): the District will implement a large-scale pilot program of devices at Martinez Junior High School, leading up to a full deployment the following year. This will be accompanied by introduction of iPads into special education classrooms, an additional pilot program in one 4th or 5th grade classroom at each school site, expansion of the Independent Study model, and the allocation of mobile devices for check-out at Alhambra High.

6.1c – Phase 1.3 (2013-14): the District will deploy mobile devices at Martinez Junior High in a 1:1 format, accompanied by intensive staff training, and a District-wide increase in technology integration.

6.1d – Phases 1.4 and 1.5 (2014-16): the District will expand the technology program to fully implement a 1:1 solution in grades 4-12, and a small-group model for grades K-3. This will be accompanied by continued staff training and support, and adjustments based on observations from previous phases.
TECHNOLOGY CAPITAL PLAN

The cost of technology equipment upgrades, and the associated costs including professional development and support staff, has traditionally been a barrier to large scale technology deployments in school districts. Decreased K-12 education funding levels in California has also been a factor over the last decade as school districts are asked to maintain or increase academic achievement with diminishing resources. However due to the voter’s support of Measure “K”, and the corresponding availability of the required funds, the Martinez Unified School District is in a unique position to implement a transformative technology plan.

7.1 AVAILABLE FUNDS

Traditionally, technology integration in the District has been funded through the general fund and philanthropic events. Although these sources of funds will continue to contribute to the District’s integration of technology in the classroom, the District expects to offset large portions of the cost of the technology plan with Measure “K” bond funds. Measure “K” was approved by District voters in 2010, and provides funding to purchase technology and related equipment pursuant to the project list provided to voters at the time of the election. On January 19, 2012, the Board of Education approved $3.0 million of the total Measure “K” authorization of $45.0 million to be allocated towards the first phase of upgrading and implementing classroom technology in the District.

The District is in a unique position to fund the required technology improvements due to the voter support of Measure “K”. While bond funds have been allocated for the requisite technology improvements, it is the District’s intent to first explore all other available non-district funds to supplement or subsidize the District’s technology costs. The potential sources for the above include the E-Rate program, other privately and publically funded grants, as well as any federal subsidies for the issue of bonds such as the Qualified Zone Academy Bond (QZAB) subsidy program. Other qualifying sources may include It is the Districts intent to explore all other sources of funding to preserve Measure “K” for other long term projects where possible.

To the extent that the above mentioned sources of funding are insufficient, it is the District’s intent to fund the purchase of eligible devices, equipment and infrastructure with bond proceeds. Certain types of costs such as salaries, software not bundled with a device, or purchases typically funded out of working capital are not eligible to be paid out of bond proceeds, and must be funded by other sources. These costs will be incurred during the initial rollout as well as recurring annually over the life of the plan.

The cost of the program is anticipated to be offset by the use of bond proceeds and other available sources. On this basis, there is no impact to any existing programs as a result of the implementation of the plan. At the time of this writing, it is noted that some of the funding sources identified above may change in light of the Governor’s proposed “Weighted Student Formula” for K-12 funding.
## 7.2 USE OF BOND PROCEEDS

Under the provisions of Proposition 39, school bond funds may be used to purchase equipment and furniture. However, the total expenditures must meet an average life test as described below:

The average life for the 2011 bond issuance is approximately 18.75 years. The average life of a bond issuance can be no more than 125% of the average life of the assets and acquisitions being funded by the bond. Therefore, the average life of all assets funded by the 2011 bond must be at least 15 years.

The average life of the assets and acquisitions funded includes the sum total expenditures of that issuance. Therefore, the relatively shorter lifespan of technology equipment in this case will be offset by the longer lifespan of facilities maintenance and construction activities also funded as part of the 2011 bond issuance. A vast majority of expenses from the 2011 bond issuance will be spent on new construction and modernization projects which typically have a lifespan of between 20 and 40 years. On this basis, the District is in a position to acquire some assets with a short useful life with a portion of the 2011 bond proceeds.

## 7.3 IDENTIFIED COSTS

The District has identified direct and indirect costs associated with upgrading the existing technology infrastructure and implementing classroom use of mobile computing devices. These costs are based upon estimates from vendors, District staff, and the implementation of similar programs. The prepared cost estimates are deemed to be accurate based upon available information, but are meant for budgetary purposes only. The actual costs may vary, and can only be determined at the time of the receipt of bids to provide the required infrastructure improvements and for the purchase of devices and equipment.

The initial phase of technology infrastructure improvements, including the deployment of mobile devices, is estimated to require $2.8 million in bond funds, and approximately $105,720 in other sources. In addition, it is estimated that approximately $362,700 will be required from sources other than the bond funds to continue to support the implementation of the plan in FY 2013-14 and $416,450 in FY 2014-15. The increase in cost is attributed to the increase in full time equivalent (FTE) personnel support as well as increased licensing costs associated with the online learning management system as a greater number of devices are deployed.

Following the initial implementation, $1.0 million in allocated bond proceeds would go towards refresh cycles that will occur between 2015 and 2018. The cost of the refresh is anticipated to be lower than the initial capital outlay for devices and equipment, due to the District’s plan to phase in a Bring Your Own Device (BYOD) program, the extended useful life of supporting equipment like charging carts, as well as a projected decline in future costs.

The initial cost of implementation, and the annual cost of supporting the plan are presented in further detail below. The specific allocation of the $1.0 million in bond funds for the refresh cycles will be funded by a future series of bonds, and is not analyzed in this plan. This allocation will be best achieved just prior to the refresh, based on the information available and prevailing technologies at that time.

### 7.3.1 ONE-TIME COSTS

The following is an estimate of initial costs that the District should expect to incur to implement the plan:
INITIAL ONE-TIME COST #1 - WIRELESS AND INFRASTRUCTURE UPGRADES

As part of establishing this plan, a baseline analysis of a potential wireless solution was conducted and heat maps were prepared for all of the schools to establish a cost estimate for the installation of wireless access points at each school site. The scope of this project includes wireless access point hardware, installation, and configuration. According to the assessment found in appendix g, approximately 129 wireless arrays would need to be installed throughout the district to provide a robust wireless network at each school site. The total estimated cost for implementing a wireless solution at all of the district’s school sites is $750,000. This entire cost is payable from measure “k” bond funds.

INITIAL ONE-TIME COST #2 - STUDENT AND STAFF DEVICES

Device cost will vary depending on the selection of device by the District at time of implementation. For budgetary purposes, this plan assumes that the technology will be implemented at all grade levels. For grades K-3, one tablet device (e.g. iPad) will be provided for every six students. For Grades 4 and 5, one tablet device will be provided per student. For grades 6-12 one netbook will be provided per student. At each grade level, teachers will be provided with the same device that the students use. It is estimated that the cost per student device, along with the supporting equipment, tracking software, protective cases, and packaged installed software will be $721.50 per tablet, and $530 per netbook. This cost estimate includes applicable taxes, a 5% cost allocation for shipping and a $50 per device configuration and deployment allocation. The cost of a similar teacher tablet device for Grades K-5 will be approximately $835 which includes an additional software allocation and the cost of a display adapter that is compatible with existing classroom technology. The cost of a netbook for teachers is estimated to be equivalent to the student device for all applicable grade levels. Therefore, the total cost of student and staff devices and equipment for all grade levels is estimated to be approximately $1.9 million and is expected to be paid out of bond proceeds, subject to bond counsel approval.

INITIAL ONE-TIME COST #3 – STORAGE, SECURITY, AND SYNCING EQUIPMENT

Necessary equipment to store and secure equipment during non-instructional time will be required. The District will need storage lockers and secure carts on wheels to prevent theft or damage. These lockers and carts will also serve as charging stations for the devices between instructional uses. Additionally, syncing stations may be required to image and push necessary software onto devices. This plan allocates approximately $132,851 to the purchase of the aforementioned equipment. It is expected that cost associated with storage, security, and syncing will diminish as the District’s program expands and the District transitions to a technology program in which students can either take home the devices or utilize their own person devices.

INITIAL ONE-TIME COST #4 – MOBILE DEVICE MANAGEMENT

The District will incur software costs associated with a mobile device management system that will allow staff to monitor and control what students are doing on their devices. This system will have an initial startup cost of $25,000 (from Measure K) and will be installed on all compatible devices. An annual subscription cost for this service will be described in Section 7.2.2

7.3.2 ANNUAL COSTS
Annual support costs will be incurred during the first year and every year thereafter. These costs cannot be covered with bond funds. The following is an estimate of the annual costs that the District should expect to incur to support the plan:

**ANNUAL COST #1 – PROFESSIONAL DEVELOPMENT**

Professional development will constitute an increasing portion of annual costs as the need to train staff increases with rollout of additional devices. It is anticipated that professional development will include the training of library media assistants, Site Technology Liaisons, and summer academies for instructional staff.

The District’s proposed professional development plan is estimated to cost approximately $37,000 in FY 2012-13 and $130,000 in FY 2013-14 and FY 2014-15. These funds will be designed to facilitate training for all staff members in the use of classroom devices, the online learning management system, device management, and curriculum integration.

**ANNUAL COST #2 – TECHNOLOGY SUPPORT**

In order to support staff, additional FTEs will need to be allocated for a Technology Specialist and Coordinator of Educational Technology pending Board approval. Both of these positions are described in detail in Section 5.1. It is anticipated that an increase in FTE for a technology specialist will correlate with the increased number of devices deployed in the District. The plan allocates an additional 0.5 FTE in FY 2012-13, 1.0 FTE in FY 2013-14, and 1.5 FTE in FY 2014-15. The Educational Technologist will become a fulltime position pending Board approval in FY 2013-14. The cost over the next three fiscal years is estimated to be $45,220 in FY 2012-13, $200,000 in FY 2013-14, and $242,750 in FY 2014-15.

**ANNUAL COST #3 –SOFTWARE LICENSES AND SUBSCRIPTIONS**

An online learning management system will allow students and teachers to share resources and conduct interactive activities such as chat forums and online assessments. This software is critical in the deployment of mobile technology as it allows the construction of virtual classrooms in which students will be able to access readings, assessments, assignments, forums, and grades. The cost will be directly associated with the required licenses for the number of devices deployed in the District. The estimated cost is anticipated to be $12,000 in FY 2012-13 then increasing to $24,000 in FY 2013-14 and leveling off in FY 2014-15 at $35,000 corresponding with full deployment.

Additionally, there will be a $10,000 cost in 2012-13 and an annual fixed cost of $5,200 for the District’s mobile device management system. This cost will continue through the life of the program.

**ANNUAL COST #4 –INCREASED BANDWITH**

The District will need to increase bandwidth to all sites where devices are deployed in order to ensure speeds for all students and staff to utilize the District’s online content and online learning management system. It is estimated that cost of increased bandwidth the District’s current provider would be $1,500 in FY 2012-13 and $3,500 thereafter.
7.4 PROPOSED CAPITAL FINANCING PLAN

The tables on the following page provide a summary of the proposed sources and uses for the program.

Martinez Unified School District Technology Program Budget

<table>
<thead>
<tr>
<th>Sources of Funds</th>
<th>FY 2012-13</th>
<th>FY 2013-14</th>
<th>FY 2014-15</th>
<th>Program</th>
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* It is anticipated that $9,750 will be allocated from Economic Impact Aid to pay for the cost of training in FY 2011-12

7.5 POTENTIAL FINANCIAL SAVINGS
Although no potential savings from the implementation of this technology plan were included in the capital plan, there are potential cost savings that the District may experience over the life of the program. Technology investments can have 3 types of positive impact on the financial situation of the District.

- **Cost avoidance:** New technology will allow the District schools to cease paying for services that can be done for free with a computer, such as downloading free teaching tools and certain instructional materials, rather than purchasing books or hard copies.

- **Cost savings:** With a 1:1 computer solution, the District can purchase services or materials at a lower cost, for instance disseminating PDFs or emails rather than printing materials and notices. Additionally, the device deployment positions the District to utilize digital textbooks and benefit from the associated potential cost savings in acquisition, storage, distribution and maintenance of instructional and support materials.

- **Revenue enhancements:** The uses of technology in the classroom coupled with individualized and differentiated learning may increase graduation rates and maintain a higher level of ADA. It is also possible that the District may experience enrollment growth due to the implementation of the program.

Although revenue enhancements such as increases in enrollment will require an investment in additional devices, any gains will be beneficial to the District and its available funding for technology over the life of the program.
8.1 KEY TERMS AND ACRONYMS

1. **1:1 computing**: Application of mobile technology in an educational scenario where one device is supplied to every student.

2. **ADA**: Average Daily Attendance

3. **AUP or Acceptable Use Policy**: A governing policy that regulates student and employee use of networks, hardware and software related to the District’s technology program. This policy should be geared toward establishing boundaries of student responsibility and encouraging the ideals of “Digital Citizenship.”

4. **Blended Learning**: Refers to a mixing of different learning environments that combines traditional face-to-face classroom methods with more modern computer-mediated activities

5. **BYOD**: Bring Your Own Device

6. **CCSS**: Common Core State Standards

7. **Cloud computing**: The storage of documents, programs, or services on an off-site server accessed through a broadband internet connection.

8. **COW**: Computers on Wheels; alternatively Carts on Wheels

9. **Digital Citizenship**: Establishing an online reputation built on mutual respect and responsibility. Often cited in Acceptable Use Policy related to mobile device plans rather than the traditional method of blocking access to internet content.


11. **FCC**: Federal Communications Commission

12. **FTE**: Full Time Equivalent

13. **FRPM**: Free and Reduced Price Meals program

14. **FY**: Fiscal Year; a fiscal year for California school districts runs from July 1st to June 30th of the following calendar year.

15. **Heat Maps**: Illustrations of anticipated wireless signal strength based on recommended placement of wireless devices and existing building conditions.

16. **IEP**: Individualized Education Program
17. **ISTE:** International Society for Technology in Education

18. **LMS or Learning Management System:** An online information system that collates vital course information, content, assignments, and grades, and tracks student progress.

19. **PD:** Professional Development

20. **PDF:** Portable Document Format; a standardized electronic document format that preserves document layout and style on a multitude of computing platforms.

21. **Netbook:** A very portable laptop with a small screen and keyboard. Meant to stress portability and cloud capabilities over memory or processor speed, netbooks usually have longer battery life and more emphasis on web-based applications than larger laptops.

22. **RF:** Radio Frequency

23. **SCORM:** Sharable Content Object Reference Model; a set of technical standards for e-learning software products

24. **Tablet computer:** A mobile computing device with a touch screen faceplate. These devices are usually capable of running downloadable application software, displaying e-book formats, and are capable of wireless broadband connectivity.

25. **TAC or Technology Advisory Committee:** A committee comprised of members from various District stakeholder groups formed to engage and educate the community as well as provide feedback on key planning decisions.

26. **Wireless router:** A device that broadcasts and receives a signal for wireless broadband internet.
SECTION 9

ACTION STEPS

9.1 SUMMARY OF ACTION STEPS

MINIMUM PLATFORM REQUIREMENTS

4.1a – Internal Device Selection: Using the minimum platform requirements listed in this plan, District administrators will select vendors, conduct negotiations, and sign a contract with selected technology vendors to arrange for the purchase of classroom mobile technology.

EXPANDED BROADBAND ACCESS

4.2a – Communicate information regarding reduced-price broadband: The District should notify parents or guardians of children at area schools of the opportunity to receive a discount on home broadband access.

4.2b – Investigate afterschool on-site internet access opportunities: The District shall investigate methods for allowing students without broadband at home to access the network on one or more school facilities in the District with the goal of increasing equality of access to the network.

4.2c – Investigate free wireless options: The District should reach out to locations in close proximity to school sites to create a list of free wireless access points for student use.

LMS EVALUATION

4.3a – Internal LMS selection process: The District, using the minimum LMS functionality guidelines detailed in this plan, will conduct an internal review of vendor offerings, select a product for testing in District classrooms, and integrate the new system with the emerging technology-based curriculum.

INTEGRATION OF EXISTING TECHNOLOGY

4.4a: Inventory technology: All schools will perform an inventory of existing technology resources, specifically taking into account the age and expected lifespan of each device. This document will form the basis for making decisions on what machines to repurpose, and which to sell or donate.

4.4c: Evaluate computer lab usage. Following the transition to a mobile computing-based curriculum, the District will perform an audit of computer lab usage. Some labs, such as the high school lab used for CAD instruction, or the middle school industrial technology lab, contain specialized equipment or software and will continue to be...
necessary in a mobile environment. Other labs, such as those used for basic computer instruction, will be rarely used.

**PROFESSIONAL DEVELOPMENT PROGRAM**

5.1a – Create Educational Technologist position: pending Board approval, the District shall create and fill a District-wide position dedicated to supporting professional development and technology integration needs.

5.1b – Identify Site Technology Liaisons: Pending Board approval, the District shall identify a teacher at each school site that will serve as a leading technology educator for their school site, solving minor troubleshooting issues and aiding in professional development planning.

5.1c – Train network and technology specialists: the District, with guidance from the Director of Technology, Educational Technologist or Technology Liaisons, will train IT specialists in the tracking, upkeep, and administration of new devices.

5.1d – Schedule Summer Academy: the District, with guidance from the Coordinator of Educational Services, Educational Technologist or Technology Liaisons, will schedule 2 day workshops in June and August as device training sessions for teachers.

5.1e – Schedule large group training session: the District, with guidance from the Educational Technologist or Technology Liaisons, will schedule a large group training session at each school site for all teachers at that site.

5.1f – Schedule small-group or 1:1 training sessions: the District, with guidance from the Educational Technologist or Technology Liaisons, will work with teachers to schedule follow up trainings for small groups organized by subject area or grade level.

5.1g – Create online module system: the District, with guidance from the Educational Technologist or Technology Liaisons, will create a system of online training modules to give teachers 24/7 access to the materials necessary to successfully integrate technology into their daily instructional activities.

**PHASING STRATEGY**

6.1a – Launch (2011-12): the District shall conduct a detailed evaluation of the concepts, devices, and curriculum integration strategies tested during the 2011-12 pilot program (See example in Appendix C). Results from this evaluation will inform choices made during future phases.

6.1b – Phase I (2012-13): the District will implement a large-scale pilot program of devices at Martinez Junior High School, leading up to a full deployment the following year. This will be accompanied by introduction of iPads into special education classrooms, an additional pilot program in one 4th or 5th grade classroom at each school site, expansion of the Independent Study model, and the allocation of mobile devices for check-out at Alhambra High.

6.1c – Phase II (2013-14): the District will deploy mobile devices at Martinez Junior High in a 1:1 format, accompanied by intensive staff training, and a District-wide increase in technology integration.
6.1d – Phase III & Ongoing (2014-16): the District will expand the technology program to fully implement a 1:1 solution in grades 4-12, and a small-group model for grades K-3. This will be accompanied by continued staff training and support, and adjustments based on observations from previous phases.

UPDATES TO THE ACCEPTABLE USE POLICY (AUP)

The District will update both the Student and Employee Acceptable Use Policy according to established best practices. The new policy will stress student responsibility in regards to use of the school network, and impart key values of “Digital Citizenship” to the next generation of District students.
APPENDICES

APPENDIX A: FIVE-YEAR STRATEGIC FOCUS AREAS FOR STUDENT ACHIEVEMENT

The Strategic Focus Areas for Increasing Student Achievement were adopted by the District Board of Education on April 11, 2011 and reflect a dedicated effort by District staff to connect District data, research in best practices, and input from stakeholder groups into a strategic plan for developing the instructional program and providing guidelines when making critical fiscal decisions. The document was developed collaboratively with input from parents, teachers, community members and administrators and included review by the District’s CAC, TAC, and Career Pathways Committee, as well as other key stakeholder groups. Following its initial Board of Education approval, District leadership may adjust the plan according to need and provide updates to the Board on an annual basis. Within the plan, asterisks (*) indicate the establishment of a potential certificated position in alignment with the focus area.

FIVE STRATEGIC FOCUS AREAS

The district’s strategic focus areas for increasing student achievement are as follows:

- 1: Increase Achievement for English Learners
- 2: Response to Intervention (RtI)
- 3: Technology Integration for Teaching and Learning
• 4: Career Pathways/Linked Learning
• 5: Professional Learning Communities (PLCs)

FOCUS AREA #3 – TECHNOLOGY INTEGRATION FOR TEACHING AND LEARNING

Building the Technology Foundation

Our goals: To instill students with 21st century skills, guide instruction with immediate assessment of understanding, go beyond the classroom walls with online/distance learning, help students find their own paths to learning, provide students digital textbooks with living and interactive content, allow targeted instruction for more efficient learning and multiple pathways, engage students with project-based learning, and allow students and staff to collaborate in online professional learning communities.

2010-2011

• Refinement of K–3 developmental curriculum/standards
• Training and support for:
  o Technology integration
  o Smart Boards
  o Data Director
  o ESGI
  o Document Cameras
  o Electronic grade books
  o Website design
• Introduce Collaborative Computing Tools such as Wikis, Google Docs, Blogs, social networking
• Implement additional parent communication tools with Parent Link
2011-2012

- Refinement of 4–8 developmental curriculum/standards
- Implementation of district-wide wireless
- Pilot of Mobile computing devices, one class each: 4th, 6th, 9th
- PD and support for:
  - Collaborative Computing for PLCs
  - Social Network as a Classroom Tool
  - Digital-citizenship
- Implementation of Student Google Apps for EDU accounts 4th-12th
- GroupWise to Gmail conversion for all staff
- Update technology infrastructure and equipment
- Increase technical support

2012-2013

- All Group 1 deployment / PD / support
- **Group 1**: Mobile computing devices deployed 4th, 6th and 9th
- **Group 1 Teacher PD**:
  - Learning Management Systems
  - Google Apps for EDU
  - Supervising Student Email
  - Mobile Computing Device Basics
- **Group 1 Pilots**:
  - Digital Textbooks (1 teacher / grade)
  - “Bring Your Own Device” (BYOD) program
- Ongoing PD and support
- Update technology infrastructure & equipment

*Technology Integration specialist 1.0 FTE*

2013-2014

- All Group 1 & 2 deployment / PD/ support
- Continue & refine focus
- Expand Digital Textbooks to early adopters in Grades 4,5,6,7,9 and 10
• **Group 1 Teacher PD:**
  o Collaborative Computing for PLCs
  o Becoming an Online Teacher/Hybrid Learning
  o Online Exams/Student Response Systems

• **Group 2:** Mobile computing devices deployed grades 5, 7 and 10

• **Group 2 Teacher Training:**
  o Same as prior Group 1 in 12/13

*Technology Integration specialist 1.5 FTE*

2014-2015

• Continue & refine focus
• District-wide PD /deployment / support for mobile computing / MyClass / Google Apps
• Expand Digital Texts to all grade levels

• **Group 1 Teacher PD:**
  o Online Project-Based Learning
  o Targeted Instruction
  o Customizing Digital Textbooks

• **Group 2 Teacher Training:** (Same as prior Group 1 in 13/14)

• **Group 3:** Mobile computing devices deployed 8th, 11th, 12th

• **Group 3 Teacher PD:** Same as prior Group 1 in 12/13

*Technology Integration specialist 2.0 FTE*
APPENDIX B: DISTRICT DEMOGRAPHICS AND STATISTICS

This program of technological advancement will continue far into the future, and must be tailored to the specific needs of Martinez USD in order to provide sustained, equitable access to mobile technology solutions for all students. The District’s demographic, enrollment, development, budget, and staffing statistics must be considered in the development of the District’s technology integration plan. These statistics will inform elements of the technology integration plan such as quantity of devices, wireless infrastructure needs, and deployment strategy. The incorporation of these considerations will allow the District to adopt a plan to be phased over a number of years with a high level of certainty that the stated objectives and goals are met.

Various sources of District demographic data were available for the years 2008-2011. While specific data points may have changed to date, detailed analysis shows that the District should not expect dramatic changes in student enrollment or demographic trends. Therefore, these conclusions can still inform decisions related to capital and sequencing projections, and are summarized below.

ENROLLMENT ANALYSIS

An analysis of historical enrollment trends in the District and projections for the future is necessary to plan a sustainable course for technology integration that will meet the needs of both current and future District students. Four major components are used to project enrollment: the student enrolled population, local birth rates, student transfers, and residential development. In 2009, the District commissioned Jack Schreder and Associates to evaluate the District’s enrollment trends and project future enrollment growth through 2020.

![Historical K-12 Enrollment Chart]

This report was based on the examination of District birth rates and cohort survival rates. The 2009 report indicated the District experienced a steady decline in enrollment starting in 2000-01 when the District’s enrollment hit a 15-year historical high of 4,375 students. This decline continued until 2008-09 at which time the District’s enrollment decreased to 3,987 students. Despite a negative trend in the District’s enrollment over a 10-year period, the report concluded that enrollment in the District had stabilized and that enrollment would experience minimal fluctuation culminating in flat growth through school year 2019-20.
Since the completion of the 2009 report, the District has experienced about 2% enrollment growth annually with an increase of enrollment to 4045 in 2009-2010 and 4,061 in 2010-11. Although the current enrollment level is higher than the projections forecasted in the 2009 report, the minimal growth rate indicates that the District should not experience dramatic fluctuations in enrollment over the next 10 years.

Below is data on District enrollment during the 2010-11 school year, broken down by grade level. The data indicates that the while enrollment continues to grow that the District has proportionally more students in secondary grade levels than the primary grade levels. Due to this uneven distribution, it is unlikely that the District’s enrollment will drastically increase, as students in higher grades graduate and comparatively smaller cohorts matriculate through the school system.
Both the enrollment projections provided by the 2009 report and the current enrollment figures imply that enrollment will remain stable during the intended time frame of this plan. The current enrollment projections do not indicate a need for additional school sites through 2020 and suggests that District’s current school sites would be sufficient to house the District’s enrollment over the same period of time.

The conclusions drawn from this analysis are as follows:

1. The quantity of devices purchased by the District could support the entire student body for a period of at least 4 years without substantial increases in cost associated with dramatic increases in enrollment.

2. Significant investments in technology infrastructure will not be required for any additional school other than the existing 4 elementary schools, 1 middle school, 1 high school, 2 alternative education schools, and 1 adult education school site during the intended period of implementation.

Once enough mobile devices are acquired to outfit the current enrollment in any grade, it will be necessary for the District to refresh old devices on a set time frame – usually every 4 years – but it will not be necessary for the District to purchase new devices yearly to keep up with increased demand. Phase 1 of the program is projected to begin in the fall of 2012, and continue through the spring of 2016. In this time frame, District enrollment is in fact expected to decline, meaning that the District may have a surplus of mobile devices by the end of Phase 1.

**STAFFING ANALYSIS**

Staffing data changes year to year depending on enrollment and personnel needs. Final data for the most recent year is used in planning technology integration to establish a baseline for the number of personnel to support with computing devices and associated infrastructure.

Based on data reported to the State for the 2010-11 school year, the District employed 180.7 full-time equivalent teachers throughout the District. The District employed 79 full-time equivalent teachers in elementary school, with a student-teacher ratio of 21.7. There were 36.6 full-time equivalent teachers at the District’s middle school, with a student teacher ratio of 24.3. The high school was staffed with 55.8 full-time equivalent teachers, with a ratio of 22.6. There were an additional 9.3 full-time equivalent teachers working in alternative or continuation schools.
The overall pupil-teacher ratio in the District for the year was 22.4, which is lower than the California average of 21.75.

<table>
<thead>
<tr>
<th></th>
<th>Number of Schools</th>
<th>Enrollment</th>
<th>Full-Time Equivalent Teachers</th>
<th>Pupil-Teacher Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>4</td>
<td>1,715</td>
<td>79.0</td>
<td>21.7</td>
</tr>
<tr>
<td>Middle</td>
<td>1</td>
<td>891</td>
<td>36.6</td>
<td>24.3</td>
</tr>
<tr>
<td>High School</td>
<td>1</td>
<td>1,259</td>
<td>55.8</td>
<td>22.6</td>
</tr>
<tr>
<td>Alternative</td>
<td>1</td>
<td>76</td>
<td>3.1</td>
<td>24.5</td>
</tr>
<tr>
<td>Continuation</td>
<td>1</td>
<td>108</td>
<td>6.2</td>
<td>17.4</td>
</tr>
<tr>
<td>Nonpublic, Nonsectarian³</td>
<td></td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>4,061</td>
<td>180.7</td>
<td>22.4</td>
</tr>
</tbody>
</table>

**STATE AND NATIONAL COMPARATIVE ANALYSIS**

For purposes of comparing local District statistics with best-practices from comparative school districts across the country, this plan reviewed U.S. Department of Education’s 2010 survey on local, state, and national education statistics. Department of Education data relied on information collected from 2008-2010 and is referenced here for comparative analysis only.

**Staffing:** Martinez USD is substantially smaller than the average California school district in terms of full-time teachers on staff. The District’s size is more analogous to the national average of 179 full time equivalent teachers. This smaller size makes the District comparatively more versatile and maneuverable than other Districts around the state.
Pupil-Teacher Ratio: When comparing the District’s pupil-student ratio to California and national averages, the survey showed the District’s ratio to be much higher than the nationwide average of 15.52. This is a vital consideration when reviewing technology deployment programs from around the country that may have benefited from this lower ratio. In light of the District’s relatively high ratio, the District will have to find creative measures to make the most of staff resources in creating technology liaisons.

![Bar graph showing Pupil-Teacher Ratio for Martinez Unified School District compared to California and U.S. averages.]

Revenue per pupil: The most recent year from which mutually comparable revenue data was available on a local, state, and national basis was for the 2008-09 school year. The data is too old to reflect Measure K revenues, or to display their effect on the sustainability of the general fund. Measures such as the purchase of solar panels to reduce utility costs and the purchase of technology with bond proceeds will relieve pressure on the District’s general fund, and create a sustainable solution to increase per-pupil revenue.

![Bar graph showing Revenue per Pupil for Martinez Unified School District compared to California and U.S. averages in 2008-09.]

Expenditures per pupil: The available data from the US Department of Education on average per-pupil expenditures also shows the District lagging behind California and national averages. Again, this does not encompass bond expenditures, and the District will effectively close this gap with the investment in technology made possible with Measure “K.”
AVAILABLE CLASSROOM TECHNOLOGY ANALYSIS

In addition to computers available for use by students, those used by staff for instructional activities are also included when counting computers at the various schools. This count is then divided by student enrollment to arrive at a students-per-computer figure. Although the District has, on average, 2 fewer students per computer than the county average, there are disparities within the District. Both the junior and senior high schools have student-computer ratios many times that of their feeder elementary schools. As of the publishing of this dataset, Martinez Junior High School experienced the highest number of students per computer, demonstrating the site’s priority need for technology investments, as reflected by this plan’s phasing and sequencing strategy.

<table>
<thead>
<tr>
<th>School</th>
<th># of students per computer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alhambra Senior High</td>
<td>6.7</td>
</tr>
<tr>
<td>Martinez Junior High</td>
<td>6.9</td>
</tr>
<tr>
<td>John Muir Elementary</td>
<td>2.7</td>
</tr>
<tr>
<td>John Swett Elementary</td>
<td>2.9</td>
</tr>
<tr>
<td>Las Juntas Elementary</td>
<td>2.7</td>
</tr>
<tr>
<td>Morello Park Elementary</td>
<td>3.7</td>
</tr>
<tr>
<td>Vicente Martinez High</td>
<td>2.9</td>
</tr>
<tr>
<td>Briones (Alternative)</td>
<td>7.6</td>
</tr>
<tr>
<td>District Total</td>
<td>4.3</td>
</tr>
</tbody>
</table>
SPECIAL PROGRAMS

Numerous special programs serve students who meet certain criteria. Enrollment in the free lunch program is often the benchmark for federal, state, or private aid programs related to technology.

<table>
<thead>
<tr>
<th></th>
<th>Number of Students (District)</th>
<th>Percent of Enrollment (District)</th>
<th>Percent of Enrollment (County)</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Learners</td>
<td>348</td>
<td>8.6%</td>
<td>17.3%</td>
</tr>
<tr>
<td>Free/Reduced Price Meals</td>
<td>1,059</td>
<td>26.1%</td>
<td>36.7%</td>
</tr>
<tr>
<td>Compensatory Education</td>
<td>603</td>
<td>14.8%</td>
<td>26.4%</td>
</tr>
</tbody>
</table>

**English Learner:** Students who are not yet proficient in English.

**Free/reduced price meals:** Students enrolled in the program for free or reduced price meals. This figure may provide a useful benchmark for identifying at-risk students that might require home internet access at reduced rates. Internet providers such as Comcast offer lower prices for broadband access to families that qualify for the free lunch program.

**Compensatory education:** The students at the school participating in the federal Title I and/or the state Economic Impact Aid/State Compensatory Education (EIA/SCE) program. Title I is a federal program that provides supplementary services to low-achieving students from low-income families, and EIA/SCE is a state program that provides funds to low-achieving schools with high proportions of transient, low-income or English learner students. The goal of both is to improve student achievement in reading and mathematics.
APPENDIX C: SAMPLE SMART GOALS AND TEACHER SURVEY TOOL

SAMPLE SMART GOALS FOR TECHNOLOGY PILOT PROGRAM

Sample Goal 1 – Speech and Language:

- Students will articulate the sounds /k, g, s blends, l, r/ in sentences to describe something they like to do.
- Students will describe at least 19 out of 20 objects/pictures of fruit and vegetables by category, name, function, or associated item to another peer looking at a fruit or veggie salad.
- Students will use 3rd sing & reg past tense to write and illustrate a non-fiction story of their choice.

Sample Goal 2 – Using iPads to improve achievement of SpEd students:

- Participating students in 2nd-5th grades will demonstrate improvement in reading level and comprehension by February 2012 as measured by Accelerated Reader assessments. Specifically: 80% of participating students will improve their overall STAR grade level score by at least 0.5 and average at least 70% correct on AR selection quizzes.

Sample Goal #3 – Using iPads in Algebra 2

- Fall Final: Increase Advanced/Proficient students to 70%
- Spring CST Practice Test: Increase Advanced/Proficient to 50%
- Spring Final: Increase Advanced/Proficient students to 55%
- Fall Semester Grades: Increase students with A/B to 45%
- Spring Grades: Increase students with A/B to 55%

Sample Goal #4 – Using Notebook Computers with wikis, Google Docs and digital stories

- 70% of students will be able to interpret motion graphs as they relate to speed. California State Standard 9.d.
- Students will use notebook computer to increase understanding of density

Sample Goal #5 – Using Notebook Computers to improve reading comprehension, fluency

- Using programs on netbooks to improve student learning on ELA standards 1.1-1.8.
- 80% of 3rd grade students will show more than one month growth in reading comprehension and fluency. Assessment through STAR and AR test scores. Oral fluency assessment scored by teachers.
TEACHER SURVEY TOOL

The survey questions below are a recommended first step in evaluating the impact of device deployment starting with the district’s pilot phase and continuing into broader implementation. Various answer choices are displayed in italics.

1. On average, how frequently do YOU perform the following tasks using your device (iPad, Netbook, tablet)? *(Never, Less than once a week, once a week, a few times a week, once a day, often during the day)*
   a. Providing general classroom instruction
   b. Demonstrating and facilitating use of apps (specify which)
   c. Using presentation software
   d. Using video playback
   e. Using electronic books or reading materials
   f. Conducting research that contributes to lesson plans and curriculum design
   g. Assessing student work
   h. Communicating with parents, students, and colleagues (specify form of communication)
   i. Producing homework assignments
   j. Other (specify)

2. How often do STUDENTS in your classroom use their (iPad, Netbook, tablet) to do the following? *(Never, Less than once a week, once a week, a few times a week, once a day, often during the day)*
   a. Take notes on the device from classroom instruction
   b. Use installed apps, guided by teacher (specify which)
   c. Use installed apps, self-guided (specify which)
   d. View instructional videos
   e. Read educational content
   f. Writing or editing documents
   g. Working with spreadsheets
   h. Research information using the internet or installed apps
   i. Organizing and analyzing information
   j. Doing drills to increase competency
   k. Other (specify)

3. Indicate how much you agree or disagree with each of the following statements about TEACHERS and TEACHING: *(Strongly Agree, Agree, Somewhat Agree, Somewhat Disagree, Disagree, Strongly Disagree)*
   a. I feel my teaching benefits from use of the device (iPad, Netbook, tablet)
   b. I need to learn more skills before I can more effectively use the device for teaching
   c. Blocked access to certain websites limits effective use of devices on the internet (specify sites)
   d. I am better able to individualize my curriculum to fit student needs as a result of having the device
   e. When we are using these devices there is less classroom management that needs to take place
   f. I feel enthusiastic about the device program being expanded
   g. Using the devices has increased my work load
   h. The devices provide better access to diverse teaching materials and resources
   i. I am better able to meet my curriculum goals with students using the devices
   j. I am able to cover more material in class when using the devices
   k. Having the device has reduced the amount of paper based supplies that I need in my classroom
   l. I am able to explore topics in greater depth with my students when using the devices
   m. Given device problems such as poor Flash support, limited software applicability, or other challenges, I am not able to use the devices in the classroom as I had hoped
n. I wish I had more time during the day to devote to use of the devices

4. Indicate how much you agree or disagree with each of the following statements about TECHNOLOGY IMPLEMENTATION: *Strongly Agree, Agree, Somewhat Agree, Somewhat Disagree, Disagree, Strongly Disagree*
   a. The administrator(s) at my school actively encourage teachers to pursue professional development activities geared towards further implementing devices into the curriculum.
   b. Teachers at my school work collectively to develop curriculum tools using the devices.
   c. Pilot project meetings have provided opportunities to answer my questions regarding the device program.
   d. The level of support from district technology staff has been helpful in allowing an effective integration of the devices into my classroom environment.

5. Listed below are some areas that may be impacted by the use of devices in the classroom. For each area please indicate the impact you think that the devices will have/have on TRADITIONAL STUDENTS: *Declined, Slightly Declined, No Effect, Slightly Improved, Improved*
   a. Participation in class
   b. Interaction with you
   c. Interaction with other students
   d. Preparation for class
   e. Attendance
   f. Behavior
   g. Motivation
   h. Engagement / interest levels
   i. Ability to work independently
   j. Ability to retain content material
   k. Multi-tasking
   l. Other impact 1:
   m. Other impact 2:

6. Listed below are some areas that may be impacted by the use of devices in the classroom. For each area please indicate the impact you think that the devices will have/have on AT-RISK STUDENTS: *Declined, Slightly Declined, No Effect, Slightly Improved, Improved*
   a. Participation in class
   b. Interaction with you
   c. Interaction with other students
   d. Preparation for class
   e. Attendance
   f. Behavior
   g. Motivation
   h. Engagement / interest levels
   i. Ability to work independently
   j. Ability to retain content material
   k. Multi-tasking
   l. Other impact 1:
   m. Other impact 2:

7. Listed below are some areas that may be impacted by the use of devices in the classroom. For each area please indicate the impact you think that the devices will have/have on HIGH ACHIEVING STUDENTS: *Declined, Slightly Declined, No Effect, Slightly Improved, Improved*
8. Listed below are some areas that may be impacted by the use of devices in the classroom. For each area please indicate the impact you think that the devices will have/have on SPECIAL EDUCATION STUDENTS: (Declined, Slightly Declined, No Effect, Slightly Improved, Improved)
   a. Participation in class
   b. Interaction with you
   c. Interaction with other students
   d. Preparation for class
   e. Attendance
   f. Behavior
   g. Motivation
   h. Engagement / interest levels
   i. Ability to work independently
   j. Ability to retain content material
   k. Multi-tasking
   l. Other impact 1:
   m. Other impact 2:

9. How would you rate your overall expertise in the use of the devices for instruction?
   a. Beginner (i.e. piloting devices and discovering their uses for instruction)
   b. Intermediate (i.e. successful integration of devices for a portion of instruction)
   c. Advanced (i.e. utilizing multiple methods for integrating device apps into curriculum)
   d. Expert (i.e. can teach staff how to integrate various apps and supportive technology)

10. How many years have you been teaching? ________________

11. Highest level of education completed? ________________
    a. Bachelor’s Degree
    b. Bachelor’s plus credits
    c. Master’s Degree
    d. Master’s Degree plus credits
    e. Certificate of Advanced Study
    f. Doctorate
    g. Other technology credentials/experience (please specify)

12. Concentration area in which you teach (check all that apply)
    a. Science
    b. English/Language Arts
c. Technology  
d. Mathematics  
e. Social Sciences  
f. Special Education  
g. Fine Arts

13. Please list the grade levels that you teach: __________________

14. Do you teach in a multi-grade classroom: __________________

15. Please describe the successes you have experienced with the use of handheld devices in your classroom.

16. Please describe the challenges you have experienced with the use of handheld devices in your classroom.
Student Technology Survey

Directions: Please answer the following questions quickly with the answer that first comes to your mind. Remember, it is important that you answer the questions truthfully and to the best of your ability. Your name will not be used at any time, and your answers will not be available to anyone else, beyond the researcher.

Your Name: ___________________________________________ Grade____ Date _______.

Your Age: ______ years old  Your Ethnicity ____________________ Your gender: ○ Female ○ Male

(e.g. African-American, Asian-American, Caucasian, etc.)

Your Experience with Computers:

1. Does your family have a computer at home? ○ Yes ○ No

2. If your family has a computer, how often do you use it?
   ○ Never ○ Once or twice a year ○ Monthly ○ Weekly ○ Almost daily

3. How long have you been using a computer at home? Number of months and/or years: _______.

4. Do you have access to a computer / a computer lab at school? ○ Yes ○ No

5. How do you access computers at school? (check all that apply)
   ○ Individually ○ As a whole class ○ In small groups ○ In pairs

6. Since what grade have you been using computers at school? Grade: ______.

7. In an average school year, how often do you use computers at school?
   ○ Never ○ Once or twice a year ○ Monthly ○ Weekly ○ Almost daily

8. You decide when you want to use a computer to work on assignments.
   ○ Always ○ Often ○ Sometimes ○ Rarely ○ Never

Turn the page & keep going!
9. How often do you use a computer to complete the following tasks?  
Check the response that most accurately describes how often you use each of the following software programs/tools:

<table>
<thead>
<tr>
<th>Task</th>
<th>Never</th>
<th>Once or twice a year</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Almost daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Do schoolwork</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Perform calculations with spreadsheets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Create a computer program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Produce multimedia projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Search for information on the web</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. Use tutorials / drill &amp; practice software</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Others: (Please list below other programs you use)

| Other programs you use                         |       |                       |         |        |              |

10. When using each of the following software programs, check the statement that most accurately describes how much help you need.

Skip questions concerning applications that you have not used yet.

<table>
<thead>
<tr>
<th>Application</th>
<th>I always need help</th>
<th>I sometimes need help</th>
<th>I rarely need help</th>
<th>I never need help</th>
<th>I can help other people</th>
<th>I am an expert</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Word processing (e.g. Word, WordPerfect)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Presentation software (e.g. PowerPoint)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Databases (e.g. Access)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Internet (e.g. web pages)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Tutorials / Drill &amp; Practice Software</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Others: (Please list programs you use)

| Other programs you use                         |                     |                        |                    |                    |                        |                |
### What Do You Think about Computers:

11. Place a check under the response that most accurately describes your level of agreement with the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. I prefer to use computers to do school-work instead of using pencil and paper.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>d. Most days, I look forward to attending school.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>f. Computers help me to improve the quality of my schoolwork.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>h. I look forward to the beginning of laptop use in my classes.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>j. I generally enjoy schoolwork.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>l. Many of my classmates know more about computers than I do.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>n. I currently try to learn more about computers.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>p. Having a computer in class is an advantage when it comes to learning.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

You’ve got this much done. There’s only one page left!
1. Students work on group projects.

h. The teacher uses media, such as videos or tapes.

j. When I am at home doing school work, I do more than what is required (e.g., find more information, look at other resources).

13. From the activities listed in Question 12, write the letter of the two activities that you feel help you learn (e.g., that make you feel well prepared for tests, that help you complete your class assignments and/or projects):

   Choice 1: _________________________
   Choice 2: _________________________

14. From the activities listed in Question 12, write the letter of the two activities that you enjoy the most:

   Choice 1: _________________________
   Choice 2: _________________________

You're finished!
Thank you very much!
Science Project Checklist: Grades 5-8

Teacher Name: ____________________  Reviewer Name: ____________________

Date: ____________________

Project: ____________________

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>RESPONSIBILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperative Work</td>
<td>☐ I worked well with my group members.</td>
</tr>
<tr>
<td></td>
<td>☐ I showed respect and support for fellow team members.</td>
</tr>
<tr>
<td></td>
<td>☐ I did my share of the work.</td>
</tr>
<tr>
<td></td>
<td>☐ I contributed both time and effort.</td>
</tr>
<tr>
<td></td>
<td>☐ I helped us succeed.</td>
</tr>
<tr>
<td></td>
<td>☐ My work made this project better.</td>
</tr>
<tr>
<td>Experimental Research</td>
<td>☐ I figured out a question I wanted to answer.</td>
</tr>
<tr>
<td></td>
<td>☐ I thought of a way to answer my question.</td>
</tr>
<tr>
<td></td>
<td>☐ I made an hypothesis.</td>
</tr>
<tr>
<td></td>
<td>☐ I gathered information.</td>
</tr>
<tr>
<td></td>
<td>☐ I thought of some things (variables) that could mess up my experiment.</td>
</tr>
<tr>
<td></td>
<td>☐ I tried to control things (variables) that could mess up my experiment.</td>
</tr>
<tr>
<td></td>
<td>☐ I performed the experiment carefully.</td>
</tr>
<tr>
<td></td>
<td>☐ I recorded the results of the experiment.</td>
</tr>
<tr>
<td></td>
<td>☐ I summarized the results and told what they meant.</td>
</tr>
<tr>
<td></td>
<td>☐ I wrote a descriptive title for my experiment.</td>
</tr>
<tr>
<td></td>
<td>☐ I displayed my project neatly.</td>
</tr>
<tr>
<td></td>
<td>☐ I made an attractive display for my project.</td>
</tr>
<tr>
<td>Relating Concepts</td>
<td>☐ I know how this project relates to what we are studying.</td>
</tr>
<tr>
<td></td>
<td>☐ I know how this project relates to math.</td>
</tr>
</tbody>
</table>
Checklist

- I know how this project relates to business or technology.
- I know how this project relates to our community.

<table>
<thead>
<tr>
<th>Laboratory Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ I created a storyboard to organize my lab project.</td>
</tr>
<tr>
<td>☐ I followed the scientific method to do my project.</td>
</tr>
<tr>
<td>☐ I used suitable equipment for my project.</td>
</tr>
<tr>
<td>☐ I answered all lab questions as well as I could.</td>
</tr>
<tr>
<td>☐ I cleaned all glassware when I was through with it.</td>
</tr>
<tr>
<td>☐ I returned all lab materials and equipment to where they belonged.</td>
</tr>
</tbody>
</table>
Multimedia Presentation: Grades 9-12

Teacher Name: ____________________________ Reviewer Name: ____________________________

Date: ____________

Project: ____________________________

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>RESPONSIBILITIES</th>
</tr>
</thead>
</table>
| Navigation  | - Users can easily find their way through my presentation.  
|             | - Users can easily backtrack or repeat parts of the presentation.  
|             | - Users can easily skip parts of the presentation.  
|             | - Navigation tools are easy to locate.  
|             | - Navigation tools are labeled when necessary.  
|             | - Navigation tools are located in a similar place on each slide.  
|             | - Navigation tools lead to logical destinations.  
|             | - Navigation tools work.  
|             | - User can always easily quit the presentation.  |

| Media Use   | - I used original art, animations or photographs.  
|             | - I used original music or sound effects.  
|             | - I used voice-overs.  
|             | - I used art, animations, or photographs made by others.  
|             | - I used music or sound effects made by others.  
|             | - I cited all resources I include that were made by others.  
|             | - I used media in accordance with copyright.  
|             | - I used media ethically and appropriately.  
|             | - My media helps the user understand my topic better.  
|             | - My media makes my presentation more interesting.  |

| Resources   | - I used a variety of resources when collecting information.  
|             | - I consulted resources that showed different perspectives on |
the topic.
☐ I used electronic resources (Internet, CD-ROMs).
☐ I used print resources (books, magazines, textbooks, newspapers).
☐ I used reference materials (encyclopedia, dictionaries, thesaurus, atlas, etc.)
☐ I used documentaries or news interviews.
☐ I used interviews with people affected by the topic.
☐ I used portions of videos, films, or television shows to gather information.
☐ I used material in accordance with copyright.
☐ I used resources ethically and appropriately.
☐ I cited my resources.
Student Needs Assessment Survey

The following survey is seeking information from students about cyberbullying and cyberthreats. The results of this survey will help your school respond to these concerns. Your responses to this survey are confidential. You may also choose not to complete this survey. (The term parent means anyone serving in a parenting role.)

Survey Questions
1. What grade are you in? ____
2. What is your gender? ___ M ___ F
3. Do you use the Internet at home? ___ Yes ___ No
4. Approximately how many hours are you online on a typical day during the week? ____
5. What are your favorite online activities? (Please check all that apply.)
   ___ Communicating with school friends.
   ___ Meeting new people in online social communities.
   ___ Surfing to look for stuff or learn new things.
   ___ Playing online games.
   ___ Shopping.
   ___ Homework.
   ___ Designing Web sites or profiles.
   ___ Other: ____________________________________________

6. Do you use a cell phone to communicate with other students while at school?
   ___Yes ___No

7. Have your parents talked with you about how you should treat others online?
   ___Yes ___No

8. How often do your parents look at what you are doing online?
   ___Frequently ___Occasionally ___Never

9. Do you have a profile on a social networking site like MySpace or Xanga?
   ___Yes ___No
   a. If you have a profile, how often do your parents look at your profile?
      ___Frequently ___Occasionally ___Never

10. How often do you discuss what you are doing online with your parents?
    ___Frequently ___Occasionally ___Never

11. In the last six months, have you:
    a. Been in an online fight?
       ___Yes, 1 to 4 times ___Yes, 5 or more times ___No
    b. Received online messages that made you very afraid for your safety?
       ___Yes, 1 to 4 times ___Yes, 5 or more times ___No
    c. Received mean or nasty messages from someone?
       ___Yes, 1 to 4 times ___Yes, 5 or more times ___No
    d. Sent mean or nasty messages to someone?
       ___Yes, 1 to 4 times ___Yes, 5 or more times ___No
    e. Been put down online by someone who has sent or posted cruel gossip, rumors, or other harmful material?
       ___Yes, 1 to 4 times ___Yes, 5 or more times ___No
f. Put down someone else online by sending or posting cruel
gossip, rumors, or other harmful material?
  ___ Yes, 1 to 4 times ___ Yes, 5 or more times ___ No

g. Had someone pretend to be you and send or post material
that damaged your reputation or friendships?
  ___ Yes, 1 to 4 times ___ Yes, 5 or more times ___ No

h. Pretend to be someone else to send or post material to
damage that person’s reputation or friendships?
  ___ Yes, 1 to 4 times ___ Yes, 5 or more times ___ No

i. Had someone share your personal secrets or images online
without your permission?
  ___ Yes, 1 to 4 times ___ Yes, 5 or more times ___ No

j. Shared someone’s personal secrets or images online without
that person’s permission?
  ___ Yes, 1 to 4 times ___ Yes, 5 or more times ___ No

k. Been excluded from an online group by people who are
being mean to you?
  ___ Yes, 1 to 4 times ___ Yes, 5 or more times ___ No

l. Helped exclude someone else from your online group?
  ___ Yes, 1 to 4 times ___ Yes, 5 or more times ___ No

12. How frequently do you think other students at your school are
cyberbullied?
  ___ Frequently ___ Occasenally ___ Never ___ Don’t know

13. Have you seen, or do you know of, material posted online that
denigrates or puts down a school staff member?
  ___ Yes ___ No

14. Have you seen, or do you know of, any students who posted
material online that threatened or suggested violence?
  ___ Yes ___ No

15. Have you seen, or do you know of, any students who posted
material online that threatened or suggested suicide?
  ___ Yes ___ No
16. Have you seen, or do you know of, any students who participate in online hate groups?
   ___ Yes ___ No ___

17. Have you seen, or do you know of, any students who participate in online gangs?
   ___ Yes ___ No ___

18. How often do you think cyberbullying occurs when students are using school computers?
   ___ Frequently ___ Occasionally ___ Never ___ Don’t know

19. How often do you think cyberbullying occurs through cell phones or PDAs used at school?
   ___ Frequently ___ Occasionally ___ Never ___ Don’t know

20. How often do students bypass the district’s Internet filter to get to sites that have been blocked by the filter?
   ___ Frequently ___ Occasionally ___ Never ___ Don’t know

21. If you saw that someone was being cyberbullied, how likely is it that you would do the following:
   a. Join in by posting similar material.
      ___ Very likely ___ Somewhat likely ___ Somewhat unlikely ___ Very unlikely
   b. Support the cyberbully.
      ___ Very likely ___ Somewhat likely ___ Somewhat unlikely ___ Very unlikely
   c. Read the material, but not contribute.
      ___ Very likely ___ Somewhat likely ___ Somewhat unlikely ___ Very unlikely
   d. Avoid or leave the online environment.
      ___ Very likely ___ Somewhat likely ___ Somewhat unlikely ___ Very unlikely
   e. Complain to others, but not directly to the cyberbully.
      ___ Very likely ___ Somewhat likely ___ Somewhat unlikely ___ Very unlikely
f. Try to help the victim privately.
    __ Very likely __ Somewhat likely __ Somewhat unlikely
    __ Very unlikely

g. Tell the cyberbully to stop.
    __ Very likely __ Somewhat likely __ Somewhat unlikely
    __ Very unlikely

h. Support the victim publicly.
    __ Very likely __ Somewhat likely __ Somewhat unlikely
    __ Very unlikely

i. Report the cyberbullying to someone who can help.
    __ Very likely __ Somewhat likely __ Somewhat unlikely
    __ Very unlikely

22. What are some things you can do that could reduce the possibility that you might be cyberbullied? (Please list all actions you can think of.)

23. If you were being cyberbullied, what would you do? (Please list all actions you can think of.)

24. If you were being cyberbullied and you could not get it to stop by yourself, would you tell your parents?
    __ Very likely __ Somewhat likely __ Somewhat unlikely
    __ Very unlikely __ Not sure

25. If you were being cyberbullied at school, would you tell a school staff member?
    __ Very likely __ Somewhat likely __ Somewhat unlikely
    __ Very unlikely __ Not sure

26. If you saw or knew that another student was being cyberbullied, would you tell your parents or a school staff member?
    __ Very likely __ Somewhat likely __ Somewhat unlikely
    __ Very unlikely __ Not sure
27. If you saw or knew that a student had posted material threatening or suggesting violence or suicide, would you tell your parents or a school staff member?

___ Very likely ___ Somewhat likely ___ Somewhat unlikely
___ Very unlikely ___ Not sure

28. If you saw or knew that a student was participating in a hate group or gang, would you tell a school staff member?

___ Very likely ___ Somewhat likely ___ Somewhat unlikely
___ Very unlikely ___ Not sure

29. What would your concerns about telling your parents be?

30. What would your concerns about telling a school staff member be?

Thank you for your help.
Student Survey: Data Analysis and Evaluation

Questions 1 through 6 will provide basic demographic data. Over time, the district will be also able to track the amount of Internet use and activities.

Questions 7 through 10 address the important issue of parental involvement. An increase in the percentage of students reporting greater parental involvement would indicate success of the parent education program.

Question 11 asks about personal involvement in cyberbullying, as a target or as a perpetrator. For those districts interested in a more sophisticated analysis, the data in this question can be compared to data in questions 1 through 10 to determine the relationship between age, gender, online activity, and parental involvement and reports of cyberbullying involvement.

Questions 12 through 17 provide an indication of the degree to which students believe that these harmful activities are occurring. The questions were phrased “Have you seen...” because it is likely that students will more freely report behavior they witness than they will report their own online activities, if those activities are considered inappropriate.

Ideally, the numbers of students reporting personal involvement or knowledge of these online harmful activities will decrease. However, districts are advised to be cautious in their reliance on this data to determine effectiveness for two reasons:

- There may be an increase in reports because increased awareness of concerns has led to increased sensitivity to the issue.
- All indications are that these concerns are increasing, along with the amount of teen online activity. As noted in chapter 3, in a survey that was originally administered in 2000 and then
readministered in 2006, the rate of reported cyberbullying doubled.*

Given the lack of understanding about these concerns, a district that holds the incident rates stable or has only a modest increase may be addressing the concerns in a highly effective manner.

Questions 18 through 20 will provide specific insight into the effectiveness of the district's current policies and practices around Internet, cell phone, and PDA use.

Question 21 assesses bystander responses. Responses “a” and “b” can be considered harmful; responses “c” and “d” are neutral; and responses “e” through “i” are favorable responses. Over time, a decrease in students answering “very likely” or “somewhat likely” to responses “a” through “d” and an increase in those answers to responses “e” through “i” would indicate success in achieving the instructional objectives.

Questions 22 and 23 were specifically written open-ended to assess student knowledge of potentially effective ways to prevent and respond to cyberbullying incidents. The more potential responses a student can generate, the greater the personal power that student should feel in knowing how to prevent such incidents and respond to specific situations. An increase in the number of potentially effective ways to prevent and respond will indicate successful implementation of the student's education.

Questions 24 through 28 assess student comfort in reporting online concerns to adults. Questions 29 and 30 specifically solicit reasons for such reporting behavior. The answers to these questions can provide valuable insight into the development of educational and practical strategies to encourage reporting. Periodic assessment will allow the district to determine whether the educational program and the district's reporting, review, and response efforts have resulted in an increase in youth inclination to report online concerns to adults.

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APPENDIX D: TECHNOLOGY ADVISORY COMMITTEE SUMMARY OF MEETINGS

In parallel to the District’s technology pilot, the District engaged in an extensive stakeholder discussion process to review goals and gather input from District staff, teachers, students, and members of the Martinez community.

A Technology Advisory Committee (TAC) was established to:

- Engage the District’s community and report back findings to facilitate an informed discussion on planning for next generation technology improvements
- Assess methods of integrating student technology into the curriculum and determining optimal ways of improving academic performance through a transformed learning environment
- Identify what has been achieved, what needs remain, and develop priorities for implementation of the District’s technology program

TECHNOLOGY ADVISORY COMMITTEE MEMBERS & SCHEDULE

The existing Committee will be repurposed to be comprised of approximately twenty five members representing various stakeholder groups from the District’s community of teachers, administrators, students, parents, community organizations, and businesses. The Committee was designed to include at least one representative from each of the following categories:

- K-2 representative
- Grade 2-5 teachers in mathematics or ELA
- Elementary school administrator
- Martinez Junior High School administrator
- Middle school mathematics instructor or middle school mathematics department head
- Middle school ELA instructor or middle school ELA department head
- Alhambra High School administrator
- High school science department head or instructor
- High school social studies department head or instructor
- High school mathematics department head or instructor
- High school ELA department head or instructor
- PTA Executive Board member
- Community member from a local business/organization
- Member of the Martinez Education Fund
TAC PLANNING WORKSHOPS

Meetings of the TAC were structured to provide a forum for exploring new technology concepts and contributing a district vision for technology. Discussions expressed goals and needs for the use of technology to enhance the existing curriculum as well as potential tools to support curriculum development. Existing technology documents, resources, and integration methods were evaluated by teachers and students. Needs for off campus network access were noted and policy adjustments for on campus acceptable use were considered.

Five TAC meetings were held over a five month period, and occurred on the following dates:

Meeting #1 – September 13, 2011
Meeting #2 – September 27, 2011
Meeting #3 – October 18, 2011
Meeting #4 – November 3, 2011
Meeting #5 – January 12, 2012

KEY IDEAS FROM COMMUNITY MEETINGS

Notes collected from committee feedback throughout the process have been utilized in this plan to determine a baseline for selecting new technologies and evaluating technology deployment strategies. A major recurring theme of the community process was that of professional development. This topic was important across all groups involved in the process, from administrators concerned about realizing the full potential of a very large investment in technology, to teachers who were hesitant to make a large leap forward in terms of technical capabilities. It is clear that for this program to gain support amongst key community members, the plan must contain a detailed program for sustained, multi-faceted professional development aimed at both establishing a base level of technical proficiency amongst teachers, and giving them the tools and knowledge to effectively utilize new devices in their daily curriculum.

The type of device was another key point of debate. The choice of device has wide-ranging implications for the level of impact, professional development needs, and long-term success of the program, and participants in the community process provided a great deal of insight on their expectations and apprehensions regarding key pieces of technology such as netbooks, laptops, and iPads.

PILOT PROGRAM AND IMPLICATIONS FOR DEVICE SELECTION

The choice of device is an integral first step in any integration of technology into District curriculum strategies, a sentiment shared by participants at community meetings. The District’s pilot program and the merits of the different platforms tested were discussed.

A netbook is a term for a small, very portable laptop computer platform. Netbooks usually have less functionality than a traditional laptop, with less memory, slower processors, and smaller screens and keyboards. They are, however, much smaller, lighter, and easier to carry than larger laptops, and often exhibit longer battery life – a
factor very important in the classroom. Attendees at community meetings voiced concerns over the netbook platform, bringing up issues with the smaller keyboard and screen size of the computer, and stating that this smaller size was not necessarily optimal for a classroom setting. Questions were also raised regarding the dexterity of younger children, and their ability to use a small keyboard. However, several participants noted the benefits of netbooks, specifically pointing out their ability to “level the playing field” and bring even lower performing students to a level where they could interact and engage with a familiar device. Netbooks also possess Flash capabilities, a factor that many community members favored, especially in terms of running specific science and math software. An overall favorable attitude towards netbooks was notable throughout the community process.

Another product, the 2 Go Classmate, was only piloted in one classroom and utilized proprietary software for use with a smart board. The objective was to test devices that would be immediately compatible with existing District technology. This particular device posed numerous problems for the teacher as the software and the devices were unreliable. The specific configuration of these devices limited their usefulness during instructional time.

Teachers piloting the iPad noted that classroom use centered on interactive applications and online research tools. Teachers noted that a lot of effort was needed to vet applications and determine the educational value of applications for the classroom. However, it was also noted that there were numerous online resources including state departments of education and other school districts that provided list of applications currently being used for educational purposes.

Teachers noted increased engagement and experimentation with alternative lessons plans. For example, one math teacher decided to try a “flipped” lesson plan in which students watched a prerecorded lecture by the teacher as homework. The class then worked on what would have been the homework assignment in class allowing the teacher to better assist students and evaluate their progress. While some teachers utilized a dedicated classroom set of iPads, other teachers shared a set. In the case in which teachers shared a set, a cart on wheels was utilized and similar to previous generations of these carts, the equipment was cumbersome and heavy. Teachers expressed that sharing classroom sets of iPads was sometimes difficult due to the differences in application subject areas, however, the use of folders and tabs on the home screen of the iPads helped to alleviate this problem.

PROFESSIONAL DEVELOPMENT

Participants at all community meetings discussed the District’s plan for professional development. A long-term, varied, and sustainable system of professional development is absolutely vital for the District’s plans to improve academic achievement and transform the traditional learning environment. Plans that were discussed outlined a method of compensation for teachers that participated in professional development for technology integration. Some members of the technical advisory committee voiced concerns about potential pushback from faculty as well as concerns regarding evaluation methodology once technology was adopted in District. Input from the TAC and community members informed the professional development plan included in this document.

EXISTING PROGRAMS AND DOCUMENTS

The community meetings also focused on ways to integrate technology into the existing daily fabric of District schools. Rather than forcing and immediate and total focus on new technology, integration should be carefully phased to give teachers and students time to adjust, and to find way to effectively enhance the current curriculum.
Additionally, the existing Acceptable Use Policy will need to be adjusted to accommodate new uses and access locations made possible through a 1:1 technology plan.

Currently, schools have few real tools to measure student progress, and no policies to measure the success of technology integration. Evaluations from the District’s pilot program will inform a baseline for curriculum integration and will establish a clear set of goals for teachers.

ESSENTIAL PIECES OF AN ONLINE LEARNING ENVIRONMENT

Community discussion regarding the role of online or “Cloud” computing solutions was focused on the fundamentals that contribute to the success of a 1:1 technology solution, and elements currently lacking from the District’s technology program. Individuals expressed concerns over the lack of file management standards, and the difficulties of adapting file management to a large classroom scale. Teachers stated that students are not truly ready for self-directed instruction, and that classes still need structure and guidance from an instructor in order to function.

Again, staff expressed the need for continuing professional development to build the skills necessary to successfully implement a 1:1 program in their classrooms. The point was made that training should specifically focus on teachers that have lower technical proficiency than the average. Teachers also questioned the exact benefits that the District would see from the advent of “cloud” computing, specifically what the implications of cloud computing would be on professional development, file sharing, and self-directed instruction?

USES OF TECHNOLOGY TO ENHANCE LEARNING

Attendees at all community meetings expected that new technology like smart boards and mobile devices would allow teachers to personalize instruction for each student, and offer an added level of enrichment to current course material. The opportunities for interactive, kinesthetic activities were also discussed, as was the potential to easily review student progress. Rather than new technology driving the curriculum and commanding classroom attention, the aim of technology should be to augment and inform traditional teaching methods and curricula. For instance, technology like iPads would allow students to quickly research information that would compliment traditional lectures, mobile devices would allow teachers to quickly administer quizzes and test, and students could collaborate on homework through cloud computing.

The role of the teacher has already been transformed by technology, and will continue to adapt as teachers gain proficiency. Often, students are more adept than the teacher in the use of certain technologies, effectively reversing the traditional classroom relationship. Again, there was great concern raised about professional development and effective training for the teachers that will be responsible for using the new devices to teach. Parents also form an integral part of the learning cycle, and many parent attendees at community meetings voiced the sentiment that support from home, and access to wireless internet at home, are paramount in the integration of technology into the District’s curriculum.
APPENDIX E: ADDITIONAL FUNDING SOURCES

TITLE 1

Title I, Part A (Title I) of the Elementary and Secondary Education Act, as amended (ESEA) provides financial assistance to local educational agencies and schools with high numbers or high percentages of children from low-income families to help ensure that all children meet challenging state academic standards.

Types of uses allowed:

- For schools with poverty rates under 40%, the school must focus Title I services on children who are failing, or most at risk of failing, to meet state academic standards
- For schools with poverty rates over 40%, the school can implement schoolwide programs that serve all students equally
- Title 1 funds cannot be used to rent, purchase, or improve school facilities.

TITLE 2, PART A

The purpose of this part is to provide grants to State educational agencies, local educational agencies, State agencies for higher education, and eligible partnerships in order to — increase student academic achievement through strategies such as improving teacher and principal quality and increasing the number of highly qualified teachers in the classroom and highly qualified principals and assistant principals in schools

Types of uses allowed:

- Hiring and training new teachers
- Training existing teachers in the integration of technology into the curriculum

ED – TECH: ENHANCING EDUCATION THROUGH TECHNOLOGY (EETT) STATE PROGRAM

The primary goal of this program is to improve student achievement through the use of technology in elementary and secondary schools. Additional goals include helping all students become technologically literate by the end of the eighth grade and, through the integration of technology with both teacher training and curriculum development, establishing innovative, research-based instructional methods that can be widely implemented.

Types of uses allowed:

- Support of continuing, sustained professional development programs
- Use of new or existing technologies to support academic achievement
- The acquisition of curricula that integrate technology and are designed to meet challenging state academic standards
- The use of technology to increase parent involvement in schools
• The use of technology to collect, manage, and analyze data to enhance teaching and school improvement

### E-RATE PROGRAM

The E-Rate Program was designed to ensure that all eligible schools and libraries have affordable access to modern telecommunications and information services. Up to $2.25 billion annually is available to provide eligible schools and libraries with discounts under the E-rate program for authorized services.

Types of uses allowed:

- Basic phone service, dial-up Internet access, direct Internet connections, and email
- Telecommunications wiring and network services
- Routers, switches, and Internet hubs
- Certain system operating software
- Wireless LANs
- Installation and basic maintenance

### ED-TECH K-12 VOUCHER PROGRAM

This program resulted from a settlement between the State of California and Microsoft Corporation. Under this program, vouchers are made available to assist districts with implementing and supporting education technology that fosters effective teaching and promotes student achievement in eligible schools that serve students in grades kindergarten through twelfth grade.

Public school districts that have a state-approved technology plan may apply on behalf of their eligible schools. This is not a competitive program, and all districts that successfully complete the application and meet the eligibility criteria will be funded. Vouchers are estimated to be between $50 and $100 per pupil, depending on the total amount of funding and the total amount of completed applications.

To be eligible for receipt of Ed-Tech vouchers, the following criteria must be met by each school:

1. Must be a public school serving students in any grades kindergarten through twelve
2. Must have a free or reduced-price lunch (FRPL) percentage of 40 percent or greater for the year prior to the grant award
3. Have a district technology plan that is current at the time of the application deadline for this program that meets the Enhancing Education Through Technology criteria and has been approved through a state review process.

All funds from Ed-Tech vouchers may be used to purchase or lease educational hardware or software, and are platform-neutral – they do not have to be used to buy Microsoft products. Funds can also be used to purchase professional development goods and services, provided that vendors are “approved providers.”
1:1 RESEARCH FINDINGS

An analysis of studies concerning 1:1 programs throughout the nation finds quantitative and qualitative results that demonstrate the positive effects of 1:1 programs which are properly planned, implemented, and supported. It is important to note, however, that simply deploying a 1:1 program will not automatically raise test scores, increase student engagement, or transform classrooms. Positive effects coincide with a careful program of phased device deployment, planned curriculum integration and an extensive and adaptable system of professional development and technical support.

Project RED, a comparative study of 1:1 mobile device deployment in disparate school districts across the country, reports that when properly implemented, investment in educational technology can have vast and wide-ranging positive effects on student achievement, engagement and collaboration, all while reducing operating costs and streamlining administrative tasks. Within schools that implemented 1:1 mobile computing solutions, 69% reported that high-stakes test scores greatly improved, 48% of schools reported that drop-out rates significantly declined, and 53% reported a drop in disciplinary action rates. In all categories, from paperwork reduction to improved teacher attendance, schools with a 1:1 computer to pupil ratio fared far better than schools with 3:1 ratios or lower. The study identified several key implementation factors that strengthen the effectiveness of 1:1 programs, of which the 4 most influential are: intervention classes that use technology in every class period, strong leadership and professional development guidance from the principal, online collaboration among students daily, and the use of technology in the core curriculum at least weekly (Greaves 2010).

The Berkshire Wireless Learning Initiative (BWLI) is a three-year pilot program across five western Massachusetts middle schools where every student and teacher was provided a laptop computer beginning in 2005. After the three year study, 71% of teachers agreed that their students had benefited greatly from participation in the 1:1 laptop program. In the two years following full deployment of 1:1 mobile computer, BWLI students achieved unprecedented 5% per year gains in the passing rate of the Math MCAs. The increase in test scores was most closely correlated with several key implementation factors, including the frequency of classroom technology use and the amount of time spent using computers in reading, English language, and Science instruction, a fact that emphasizes the importance of using new devices constantly, and in all aspects of instruction. Support for the program was unanimous amongst school principals and administrators, but 100% agreed that stronger technical support could have improved the effectiveness of the program, a statistic that highlights the need to provide a multi-faceted, continuing program of tailored professional development (Bebell et al., 2010).

A laptop pilot study in 4 elementary and 3 middle schools showed favorable results for 1:1 computing in both quantitative records of student achievement and in qualitative analysis of teacher and student behavior and perception. In 1:1 laptop classrooms, 68% of students were reported as extensively computer literate, compared to 28% in traditional classrooms. 1:1 laptop students frequently or extensively used word processing in more than half (54%) of the classroom visits compared to only 16% of the control classes. Writing assessment results showed substantial and significant advantages for laptop over control students and also showed significant advantages for the laptop group on five of the seven components of a problem-solving task. Overall responses from teacher and student surveys were that the greatest potential of a 1:1 laptop solution was in the realm of improving student writing ability (Lowther, 2003).
A 2009 study of 105 Midwestern high school students participating in a 1:1 laptop initiative in the 2008-2009 school year investigated the effects of mobile devices on student achievement based on the perceptions of students and teachers involved in the program. 92.5% of students agreed that laptops made schoolwork easier, 85% responded that laptop computers had improved the quality of their work, while 70% indicated that they did more homework outside of school with laptops and 62% reported they were more motivated to excel in school with new mobile devices. Faculty response was equally strong, with 76.9% of participating teachers observing increased student engagement, interest level, and ability to work independently (Keengwe, 2012).

Mobile devices and expanded online course materials can have a profound impact on learning and may contribute to a transformation in teaching. A sample of Arizona Title 1 schools designated as “Improvement Status” by No Child Left Behind show that internet access to homework and classroom materials increases student understanding of curriculum topics, facilitated independent learning, and improved research skills (Strom, 2010). A school laptop program in New York City observed a 10% increase in the number of teachers employing long-term projects (longer than one week) in their curriculum, a 12% increase in the use of journaling, and an overall amplification in the use and quality of informal, project-based, and small group interactions between teachers and students (Licht et al., 2002). A 2004 study in a Massachusetts public elementary school observed the impact of laptops deployed at either a 1:1, 2:1, or 4:1 ratio. The 1:1 classrooms reported several positive outcomes over the 2:1 or 4:1 classrooms, including increased daily use of computers across all subjects – especially writing – and greater penetration of computing into work at home and outside of school. Classroom instruction was also transformed, with teachers reporting far less large-group instruction in 1:1 classrooms (Russell et al., 2004).

Other studies indicate a variety of diverse benefits in student achievement, learning outcomes, attendance, discipline and other areas, dependant on the focus of the professional development, software tools and school culture.

**WORKS CONSULTED**


Cradler, Jon. Implementing Technology in Education: Recent Findings from Research and Evaluation Studies. Rep. Far West Laboratory.

Derringer, Pam. "Making 1:1 Work." School CIO.


Lowther, Deborah L; Ross, Steven M; Morrison, Gary M. (2003). When each one has one: The influences on teaching strategies and student achievement of using laptops in the classroom. Educational Technology Research and Development, ISSN 1042-1629, 1/2003, Volume 51, Issue 3, pp. 23 - 44


## APPENDIX G: PROFESSIONAL DEVELOPMENT SUMMARY TABLES

### TECHNOLOGY INTEGRATION-EXPANDED PILOT: INFRASTRUCTURE & PROFESSIONAL DEVELOPMENT PLAN

<table>
<thead>
<tr>
<th>SUPPORT COMPONENTS:</th>
<th>PURPOSE/DESCRIPTION:</th>
<th>COST DETAILS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Specialist:</td>
<td>Increased technology support district wide, to support additional devices.</td>
<td>Year 1: $0</td>
</tr>
<tr>
<td>Learning Management System:</td>
<td>Software to support management and delivery of learning content and resources.</td>
<td>Year 1: $0</td>
</tr>
<tr>
<td>Increased Bandwidth:</td>
<td>Supports additional devices.</td>
<td>Year 1: $0</td>
</tr>
<tr>
<td>Coordinator of Educational Technology (District Wide), pending Board approval:</td>
<td>Oversee device deployment and technology integration, develop &amp; deliver training modules/parent workshops, &amp; &quot;liaisons.&quot; Provides both technical and instructional support. This would be a new position, pending Board approval.</td>
<td>Year 1: $4,500</td>
</tr>
<tr>
<td>Education Technology Liaisons (1 per site), pending Board approval:</td>
<td>To build internal site capacity and leadership in technology integration. Will perform basic troubleshooting, and help plan training. New stipended positions, pending Board approval.</td>
<td>Year 1: $5,250</td>
</tr>
<tr>
<td>Library Media Assistants (Training):</td>
<td>Build capacity among LMA’s to integrate technology into the Library Program.</td>
<td>Year 1: $0</td>
</tr>
<tr>
<td>Summer Academy (Teacher Compensation):</td>
<td>Provide device-specific training, and introduction to the focus areas. Facilitates time to collaborate and create integrated lessons.</td>
<td>Year 1: $0</td>
</tr>
<tr>
<td>Technology Integration Training, Certified (District or Online):</td>
<td>Increase understanding and application in identified focus areas of technology. Allows time for integration/application. Provides staff with 24/7 access to training.</td>
<td>Year 1: $0</td>
</tr>
<tr>
<td>Professional Development, Technology Integration:</td>
<td><strong>ESTIMATED TOTAL COSTS, LAUNCH - PHASE III:</strong></td>
<td>Year 1: $9,750</td>
</tr>
</tbody>
</table>
**TECHNOLOGY INTEGRATION SUPPORT: INFRASTRUCTURE & PROFESSIONAL DEVELOPMENT PLAN DETAILS (NON-MEASURE K FUNDS):**

<table>
<thead>
<tr>
<th>PROPOSED FUNDING PLAN:</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch:</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
</tr>
<tr>
<td>ESTIMATED TOTAL COSTS:</td>
<td>$9,750</td>
<td>$105,720</td>
<td>$362,700</td>
<td>$416,450</td>
</tr>
</tbody>
</table>

**PROPOSED FUNDING SOURCES:**

<table>
<thead>
<tr>
<th>General Fund, <strong>Restricted:</strong></th>
<th>Title I, District:</th>
<th>$10,000</th>
<th>$10,000</th>
<th>$10,000</th>
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<tbody>
<tr>
<td>Title II, Basic Grant:</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td></td>
</tr>
<tr>
<td>* Economic Impact Aid:</td>
<td>$9,750</td>
<td>$73,220</td>
<td>$80,000</td>
<td>$80,000</td>
</tr>
<tr>
<td>General Fund, <strong>Unrestricted:</strong></td>
<td>Savings Generated From Solar:</td>
<td>$125,000</td>
<td>$175,000</td>
<td></td>
</tr>
<tr>
<td>Parcel Tax:</td>
<td>$2,500</td>
<td>$2,500</td>
<td>$2,500</td>
<td></td>
</tr>
<tr>
<td>* Professional Devel. Block Grant (Tier III):</td>
<td>$125,200</td>
<td>$128,950</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total, All Funding Sources:</strong></td>
<td>$9,750</td>
<td>$105,720</td>
<td>$362,700</td>
<td>$416,450</td>
</tr>
</tbody>
</table>

**FUNDING CONSIDERATIONS:**

1) Costs can be absorbed by restricted funds during 2011-12 and 2012-13, which is critical in light of the ongoing uncertainty of State funding for K-12 education (mid-year cuts are built in to the Governor’s proposed budget for 2012-13, unless a tax measure is approved by voters).

2) Economic Impact Aid and Professional Development Block Grant Funding (Tier III) may change in light of the Governor’s proposal to combine certain categorical programs with revenue limit funding into a “Weighted Student Formula” for funding.

3) Additional funding sources to consider: Unrestricted Lottery, and/or other Unrestricted Tier III categoricals.
APPENDIX H: WIFI SURVEY & WIRELESS RADIO PLACEMENT ASSESSMENT

A key component to deploying any device in the classroom is a robust technology infrastructure to support the demands of mobile computing, online or cloud accessible media and content as well as student response systems. The District must implement a full wireless solution at all schools in order to use new devices to their full potential. Only wireless broadband, with enough capacity to support future growth, will allow the devices to become a seamless part of the classroom environment.

DISTRICT INFRASTRUCTURE ASSESSMENT

A wireless site assessment was conducted for each school site and the District office in order to plan and design a wireless solution that will deliver the required wireless coverage, data, rates, network capacity, roaming capability and quality of service to support a 1:1 technology initiative and ancillary systems such as HVAC controllers and wireless VoIP. (The purpose of the wireless site assessment was to examine the current infrastructure available at each school, the primary locations for any wireless hubs and routers, and the projected signal strength over the entire school site.) Although the District may not elect to implement a 1:1 technology deployment at all sites, the District should implement a robust wireless infrastructure. The assessment involved developing a preliminary computer model based on floor plans of each site provided by the District and an initial meeting with the District’s Information Technology staff to determine the coverage and capabilities required to meet the District’s long term technology initiative. In rendering the computer model, two primary factors were considered: coverage and density. Data gathered from District staff and the resulting computer model served as a guideline for the placement of test equipment designed to measure potential radio frequency (RF) interference to identify optimum installation locations for access points at each site.

Choice of device was also a key factor in developing the proper assessment. Larger devices such as laptops typically have robust wireless antennas while smaller mobile devices such as tablets and smart phones have antennas with lower tolerances for wireless signal strength. Recognizing that the District has not selected an implementation model composed of either one type of device at each site, multiple types of devices, or student provided technology, the assessment was designed to provide the adequate parameters to meet the wireless needs of lower performing tablet and smart phone devices. This will provide the District with robust wireless coverage and density with the flexibility to implement a number of device deployment options.

SITE-SPECIFIC INFRASTRUCTURE ANALYSIS

A wireless assessment was conducted at all District schools with the goal of analyzing the possible signal strength of each proposed network. This study was conducted to establish a set of standards for each site regarding future installation of wireless hardware. This analysis will ensure that any network built on a District site will be designed in such a way as to maximize coverage and access, and be able to accommodate any future growth. The assessment generated a model designed to provide sites with reliable and robust wireless coverage that accommodate wireless antennas found in small devices such as smart phones and tablets.

This systematic survey and design of the system was conducted to the highest industry standards, and resulted in models that achieve total wireless coverage for all suggested devices and bandwidth usage statistics. The wireless
The survey was designed to identify areas of potential wireless and mobile device activity, measure characteristics of school sites, and design an effective wireless network to provide sufficient coverage and bandwidth.

**SITE MAPS**

Below are samples of the wireless network data maps generated by the site assessment at Martinez Junior High School. The assessments were conducted on both the 2.4Ghz and 5Ghz wireless spectrums using an industry standard Received Signal Strength Indicator (RSSI). These “heat maps” illustrate the anticipated signal strength based on recommended placement of wireless devices and existing building conditions. The heat maps represent wireless hardware placement schemes that will result in seamless, uninterrupted service across the entire school grounds. The assessment is presented in full in the following pages.

The wireless solution modeled for each school site minimizes the number of wireless antennas installed while ensuring that optimal density and coverage is achieved to support a 1:1 deployment. This is an attempt to reduce the cost of installation by integrating planned facilities improvements with technology infrastructure upgrades. This analysis will be used by the District to determine the parameters of any wireless solution the District decides to implement.