



Scottsdale *Unified*
School District

Technology Plan 2007

Revision 3a
April 15, 2008

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Summary of Changes from Revision 2

1. Technology Plan Introduction – Item 5, Page 6: Updated to newest standards.
2. Technology Plan Introduction – Item 6, Page 6: Updated to newest bandwidth.
3. Technology in the Classroom – Background, Page 9: added Ingleside Middle School Pilot.
4. Technology in the Classroom – Plan: Establish Technology Standards for School Campuses, Labs, and Media Centers, and for Technology Enabled Classrooms, Page 9: Updated Roll Out Plan.
5. Technology in the Classroom – Plan: Construct Technology Enabled Classrooms, Page 10: Updated Roll Out Years.
6. Technology Refresh Program - Plan: Provide Mobile Computing for High School Students, Page 17: Changed Roll Out Years.
7. Technology Refresh Program – Upgrade Campus Networks, Page 17: Changed Roll Out Years.
8. Technology Refresh Program - Plan: Increase Bandwidth on the Wide Area Network, Page 18: Implementation update at bottom of page.
9. Technology Refresh Program - Plan: Replace District Voice Systems, Page 19: Update Roll Out Plan and costs.
10. Distance Learning/Teleconferencing - Plan: Provide Facilities for Distance Learning/Teleconferencing, Page 23: Update Roll Out plan.
11. Web Based Systems - Plan: Replacement of Mission Critical Administrative Software Systems, Page 27: Updated Table 15.
12. Data Storage Environment - Plan: Commitment to an Enterprise Level Database, Page 30: Updated Table 18 and deleted text after table 18.
13. Data Storage Environment - Plan: Replacement of Traditional Server Storage with Storage Area Networks/Network Attached Storage, Page 31: Updated Table 20.
14. Summary of Capital Funding Requirements Seven Year Plan – Page 33: Updated costs, budgets and timelines.

Acknowledgements

This Technology Plan as it is written would not have been possible without the efforts of the Technology Plan Review Committee. This committee of volunteers has worked diligently over the past two months to review and make modifications to the original draft plan. The committee consisted of administrators, teachers, classified staff, technologists, parents, and interested citizens from all areas of the Scottsdale Unified School District and representing all aspects of our K-12 environment.

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Technology Plan Introduction

Scottsdale Unified School District has made a significant investment in technology over the past several years. Although the assets in place are considerable and provide a sound springboard for accomplishing our goals, additional investment in technology will need to be made to meet the future needs of our students.

1. The daily workload to maintain the current level of technology dictates that additional staffing will be required. Additional training will also need to be a priority.
2. A more robust and more reliable network has been recently implemented to connect all schools and administrative locations. This network has sufficient bandwidth to support our present and near future needs. Of course, as our needs increase, especially with the need to transport video content, this network will need to grow or be replaced. Additionally, wireless communications will need to be introduced at the campus level and at the wide area network level.
3. There are currently over 8,200 client workstations and printers in use on the network for both instruction and administration. Most of these are still viable, and many will have a useful life extending for two to three more years. Those that are obsolete will need to be replaced over the next four years, in priority order. A five year replacement plan for computers and networked printers will need to be funded.
4. Every elementary school has at least one viable computer lab and most have two. All Middle Schools have at least two viable computer labs. Each High School has been equipped with multiple labs. Additionally, nearly every classroom has at least one (or more) computer.
5. The District is in the process of migrating the standards from Microsoft Windows 2000 and Microsoft Office 2000 to Microsoft Windows XP and Microsoft Office 2003 office automation environment for the Intel based workstations, and implemented an enterprise level electronic mail, calendar, and task management system with Microsoft Outlook Exchange.
6. District-wide access to the Internet is available to all students and staff, through a very robust 100 Mbps connection. Additionally, the District has a vibrant, flexible, and informative web presence that is continuing to grow and develop.
7. A comprehensive telephone and voice mail system has been implemented, placing telephones in every office and classroom in the District. This system will need to be replaced within the next three years.
8. A significant investment has been made to deliver video to every classroom in the District. Each campus has a “head end” room to provide centralized services, and each classroom has a television set.
9. The State School Facility Board has made a significant commitment of funding to the District’s technology plant. The most important assistance provided by the SFB has been to upgrade the campus area networks at all 37 District sites. Completion of this project insured that all District “networkable” devices had a high-speed connection to the District Wide Area Network (WAN) and to the Internet. The number of data cabling drops at each site was significantly increased.
10. The biggest asset that we have is the general overall enthusiasm for technology in the District. This is reflected in District employees at all levels, parents and students, community leaders, and the Governing Board.

The purpose of this Technology Plan is to provide a guideline on spending in the area of technology and to identify priorities for acquisition of new technology and replacement of older technologies.

The Technology Plan itself is intended to be a dynamic plan subject to continuous evaluation and modification as new technologies become available. This will require an annual review and re-adoption. All aspects of the stakeholders in the District have had input into the plan.

Technology Plan Initiatives

It is important that the District build upon its existing technology assets, replacing older technology and acquiring new technology to achieve the following initiatives:

1. **Technology in the Classroom** – Standards to establish base level technology support for all schools needs to be funded and implemented. Every classroom in the District needs to be a “Technology Enabled Classroom.”
2. **eLearning** – Provide funding to identify and acquire instructional software and eLearning opportunities consistent with District and State Standards.
3. **Enhance Communication with the Community** – Enhance contact with parents by utilizing multiple forms of communication. Extend access to data and information to parents and the community, including those parents that do not have ready access to technology.
4. **Technology Refresh** – Increase staff and student access to technology. Continue to keep the existing technology plant state-of-the-art and vibrant through an established technology refresh program.
5. **Collaboration** - Provide computer based collaboration tools to allow school administration, faculty, students, and external groups to better communicate and share information and ideas.
6. **Distance Learning/Teleconferencing** - Implementation of Video Technologies to deliver training, instruction, and link offices and schools for teleconferencing and Distance Learning opportunities.
7. **Training** - Provide adequate training to all staff on the use of technology; and the support of technology.
8. **Staffing** - Provide for adequate staffing in order to implement new technologies and maintain existing technologies.
9. **Web Based Systems** - All new systems should be Web Based. Migration of administrative systems and instructional delivery systems to Web Based software systems in order to reduce the District’s reliance on client based software.
10. **Security** - Provide for physical security and security surveillance measures where ever students will be to help ensure a safe learning environment.
11. **Paperwork Reduction** - Implementation of an Electronic Document Management System to reduce the handling and storage of paper systems.
12. **Data Storage Environment** - Establishment of a data storage environment that will allow universal access to data regardless of application system or physical location, in order to improve management information to District leadership.
13. **Explore Technology Based Opportunities** - Collaboration with other entities to establish a Wireless Communications network within the District and City boundaries, generate instructional and training programs that would be of interest to organizations outside the district, and explore possible eBusiness opportunities.

Technology Business Plan

Technology in the Classroom

Initiative: Standards to establish base level technology support for all schools needs to be funded and implemented. Every classroom in the District needs to be a “Technology Enabled Classroom.”

Background

Currently, high school science rooms are equipped with multimedia capability. Each room has a ceiling mounted video projector connected to a teaching computer and enhanced audio. In the future, every classroom in the District should be a fully “Technology Enabled Classroom,” equipped with full multimedia capabilities. Additionally, a wireless communication environment should be created that would support wireless networked laptops/convertible PCs for every student and staff in every classroom.

Technology Enabled Classrooms has been piloted at Hopi Elementary School since the 2005-2006 school year with funding assistance from private and business sources. This pilot was extended to include Ingleside Middle School during the 2006-2007 school year. Implementation on a larger scale will begin with the high school remodels starting in the 2007-2008 school year, based on the experience at Hopi Elementary School and Ingleside Middle School.

Plan: Establish Technology Standards for School Campuses, Labs, and Media Centers, and for Technology Enabled Classrooms

Each campus should be assured of a base level of technology to be provided, allowing for differences between elementary, middle, and high schools; and differences in enrollment. This base level of technology support will be standardized across the District, subject to annual review and update. The current District standards are shown in Appendix A; and a cost worksheet to fund these standards is shown in Appendix B.

District campuses will need to be brought up to these standards across a four year period, as follows:

Implementation Phase	Implementation	Estimated Cost	Annual Cost
Phase I – Middle Schools	2009-2010	\$2,292,200	\$114,610
Phase 2 – one half Elementary Schools	2010-2011	\$1,326,610	\$175,210
Phase 3 – one half Elementary Schools	2011-2012	\$1,387,210	\$235,810
Phase 4 – High Schools	2012-2013	\$ 499,810	\$249,010

Table 1

Plan: Construct Technology Enabled Classrooms

A Technology Enabled Classroom will include the following enhancements:

- ◆ Every teacher will be provided with a PC/Tablet computer that will be capable of running District authorized state-of-the-art instructional software and eLearning courseware. This computer will not have student access.
- ◆ A minimum of 6 category 5e data cable drops to support classroom computers, printers, and wireless access points. These data drops should be dispersed to each classroom wall.
- ◆ Coverage within a wireless data communications zone. The coverage will be adequate to support up to 36 student computers per room equipped with wireless network adapters.
- ◆ A ceiling mounted video projector capable of projecting images from the teaching computer or from the campus video head-end, including cable TV feed. The projector mount will allow the projector to rotate 360 degrees.
- ◆ Four ceiling mounted speakers connected to an enhanced audio system capable of projecting audio from the teacher, from the teaching computer, from the video head-end, including cable TV feed.
- ◆ VHS and DVD player connected to the ceiling projector feed. This device will also act as the tuner for cable TV access.
- ◆ A Smart-board, or Smart-board capability.
- ◆ A document camera.
- ◆ A classroom telephone with access to voice-mail.
- ◆ Two-way intercom communications.
- ◆ Closed captioning equipment sufficient for up to 12 rooms per site – moved from room to room on an annual basis.
- ◆ Funding will be designated for other technology items that may become newly available.

District classrooms and campuses will need to be enhanced across a four year period, as follows:

- ◆ Phase 1 – one half of the Teacher PC/Tablets, all High School Classroom Enhancements
- ◆ Phase 2 – one half of the Teacher PC/Tablets, one third of the Elementary Student Classroom Computers, all of the Middle School Student Classroom Computers, all Middle School Classroom Enhancements
- ◆ Phase 3 - one third of the Elementary Student Classroom Computers, all Elementary Classroom Enhancements
- ◆ Phase 4 – one third of the Elementary Student Classroom Computers, Wireless Networking for District Office locations

Implementation Phase	Implementation	Estimated Cost
Phase I – 20% of all classroom technology	2008-2009	\$2,363,000
Phase I – 20% of all classroom technology	2009-2010	\$2,363,000
Phase I – 20% of all classroom technology	2010-2011	\$2,363,000
Phase I – 20% of all classroom technology	2011-2012	\$2,363,000
Phase I – 20% of all classroom technology	2012-2013	\$2,363,000

Table 2

eLearning Courseware

Initiative: Provide funding to identify and acquire instructional software and eLearning opportunities consistent with District and State Standards.

Background

Although there is a considerable amount of technology delivered instruction, more of this instruction will need to be converted to eLearning courseware consistent with District and State Standards; as well as with the National Education Technology Plan. The District currently provides some eLearning opportunities for students. Pearson Digital's NovaNET is used extensively at the high school level for credit recovery on a pass/fail basis. Other programs have been available on a less consistent basis at the elementary and middle school levels; including some video streaming usage.

Access to eLearning courseware should be made available to all students and staff. Quality measures and accreditation standards will be developed for eLearning courses that mirror those required for traditional course credit. The implementation of eLearning will have the following positive effects:

- ◆ Make it possible for students at all levels to receive high quality supplemental or full courses of instruction personalized to their needs.
- ◆ Expand opportunities and choices for students.
- ◆ Expand opportunities for professional development for teachers.
- ◆ Assist staff in meeting NCLB requirements for highly qualified teachers.
- ◆ Provides a consistent and organized means for teaching staff to collaborate and share lessons authored using eLearning tools.

Plan: Implementation of eLearning Opportunities

The content available through the eLearning courseware identified below will be linked to the District Assessment Program Galileo (ATI) during the 2006-2007 school year. An annual budget of \$100 per student should be allocated to provide for software acquisitions and subscription based software.

High School:

Continuation and expansion of the use of NovaNET has been approved for use at the high school level from 2005-2006 through the 2009-2010 school years, for the following programs:

- ◆ Credit Recovery
- ◆ AIMS Remediation in Math and English
- ◆ Gifted
- ◆ Special Education and EIS Support
- ◆ ACT/SAT Preparation
- ◆ Available to all teachers to supplement lessons in existing courses
- ◆ GED opportunities for seniors not successful in passing AIMS

A pilot program has been approved for the 2005-2006 school year to offer NovaNET courses at Sierra Vista Academy as full courses receiving letter grades.

Additionally, measures and standards will be developed during the 2005-2006 school year in order to offer eLearning courses on a traditional letter grade credit basis; and to include these courses in the High School Planning Guide.

In the evening and summer school programs, NovaNET will be offered for letter grade credit, especially in those courses where there is not sufficient enrollment for a whole section, or where it is necessary for

students to acquire many credits at a more rapid pace than is offered in the traditional single subject summer school schedule.

K-8:

Continuation of the use of EasyTech (by Learning.com) has been approved for use at the K-8 level from 2005-2006 through the 2009-2010 school years, for the Technology Literacy Program. Usage of EasyTech will continue to be monitored for usage and will be adjusted according to the needs of each campus.

Use of SuccessMaker (Pearson Digital) has been approved for use at the K-8 level from 2005-2006 through the 2009-2010 school years, for Math, Reading, and Writing. A web based application that will combine SuccessMaker and Knowledge Box and make content available from home is being developed. As that new system becomes available, existing licensing will likely need to be upgraded.

K-6:

Adoption of Knowledge Box (Pearson Digital) has been approved for use at the K-6 level from 2005-2006 through the 2009-2010 school years, for Math, Language Arts, Science, and Social Studies.

Support for Textbook associated software/resources in core classes – all levels:

Almost all of the current and future textbook adoptions include online resources as well as support materials on CD/DVD. This content is becoming increasingly central to the classroom instruction. This content will need to be supported by purchase of equipment and training.

Streaming Video access/storage – all levels:

As part of the current ASSET membership, teachers have access to a library of streaming video content which supports all content areas at all levels. It will be necessary to provide training and support for this content, including equipment to display the content in all classrooms. As usage grows, it might be more efficient to make use of a WAN cache server for content, and schedule downloads during non-peak hours.

Professional Development:

Professional development for “trainers” on SuccessMaker and Knowledge Box will begin during the first semester of the 2005-2006 school year. Professional development in eLearning software for teaching staff will begin the second semester of the 2005-2006 school year. Scheduling of professional development courses in eLearning software will be prioritized according to Site Improvement goals, by district goals, and by site requests.

The following table summarizes the District's current eLearning program with costs. The current annual expenditures amount to approximately \$33 per student per year. This funding will need to increase to \$80.47 per student per year:

Courseware	Subjects Offered	Grade Level	Current Annual Costs*
NovaNET	Comprehensive	9-12	\$ 150,000
EasyTech	Technology Literacy	K-8	\$ 180,000
SuccessMaker*	Math, Reading, Writing	K-8	Incl with KB
Knowledge Box*	Math, Reading, Science, Social Studies	K-6	\$ 540,000
Accelerated Reader	Reading	K-6	\$ 91,000
Microsoft Office	Comprehensive	K-12	\$ 110,600
Streaming Video/ ASSET	Comprehensive	K-12	No Cost
NetOp and Deep Freeze	Support Software	K-12	\$ 25,000
Internet Filtering Software	Support Software	K-12	\$30,000
Virus protection	Support Software	K-12	\$288,000
Novell management system	Support Software	K-12	\$54,000
Language Arts (ex. - Turn-it-in.com, My Access.com)	Projected New Software	K-12	\$308,000
Learning Management System (ex. - Blackboard)	Projected New Software	K-12	\$180,000
Total Annual Cost			\$1,956,600

* Moving to a web-based combination of the two programs – cost to expected to be \$30 per student

Table 3

Enhance Communication with the Community

Initiative: Enhance contact with parents by utilizing multiple forms of communication. Extend access to data and information to parents and the community, including those parents that do not have ready access to technology.

Background

Many parents and students that live in the District have access to technology at home. The District needs to find ways to make information available to those parents and to leverage this capability to improve communications with the community.

As we replace systems, such as the Student Information System and parent notification systems, the new systems should have features that allow parents and students access to information, such as grades and attendance. School events and homework assignments could be communicated using Internet access.

Unfortunately, not all parents and students have access to technology outside of the school. The District should explore ways to bridge the “technology divide.”

Plan: Implement Multiple Public Information Delivery and Access Systems

Where ever possible, multiple forms of communication should be employed; including Internet access, email, voice, and paging technologies.

1. The District Web presence will need to continue to grow and evolve as a major source of information about activities and events that affect students, parents, and the community. All schools will be encouraged to develop and maintain a campus web presence to keep students and parents informed. All teachers will receive training enabling them to develop and maintain a classroom web presence to inform students and parents about student achievement and progress.
2. An In-house calendaring system will be developed to display district and site events, educational opportunities, and professional development activities for staff. Much of this information will be available to parents and to the general public. Filters and search tools will allow the viewing of the information to be customized by the user.
3. As new Web Based information systems are implemented, secure paths will need to be provided for parents to access information about their students over the Internet. This is currently in progress with the development of the new Student Information System Genesis.
4. A centralized Phone Notification System will be purchased and installed that will be capable of contacting parents for a variety of purposes. The PNS will be capable of extracting attendance and grade data from the Student Information System and delivering this information to parents. The PNS will be capable of calling multiple contacts in a variety of methods; such as land lines, cellular, and paging systems. Additionally, the PNS will be capable of delivering recorded announcements and information to selected groups of parents.
5. Refurbished surplus equipment could be provided to parents and students through PTO programs or STRUT.
6. After school / evening access to district technology for parents and students will be pursued, particularly in the areas where those opportunities are not likely to be present in the home. More programs like this are desirable, so that students and their families are not limited by lack of technology access, and the home to school is enhanced. Additionally, a partnership with the

Community Schools program will be explored to make district technology resources available to all community members outside of school hours.

Costs to support and implement this plan are as shown on the following table:

Implementation Phase	Implementation	Estimated Cost	Annual Cost
Phone Notification System	2007-2008	\$ 145,000	\$ 21,750
Web Based Information System	2005-2010	\$ 50,000	\$ 15,000

Table 4

Technology Refresh Program

Initiative: Increase staff and student access to technology. Continue to keep the existing technology plant state-of-the-art and vibrant through an established technology refresh program.

Plan: Replacement of Obsolete Computers and Printers

There are approximately 7,775 desktop and laptop computers and approximately 840 printers in the District's active inventory. Approximately 56% or 4,324 of these are obsolete to the extent that they do not have the capacity to operate the latest instructional software or eLearning courseware. The memory and processor limitations on these machines limit our ability to upgrade them, and confine them to use with older technology software. It is becoming more difficult to find replacement parts at a reasonable cost. They are almost entirely located in instructional areas such as classrooms and student computer labs.

Macintosh, Intel Pentium I, and Intel Pentium II computers are being replaced with "off-lease" Intel Pentium III computers. These will have a useful life of at least two more years, until funding is available to replace these along with the existing Intel Pentium III computers. Thus, by 2007 an additional 2,735 Pentium 3 computers will be considered obsolete, raising the total obsolete computers to 7,059 or 91% of the installed base.

All obsolete computers being replaced and taken out of service will be removed from the site and designated as surplus. They will not be moved to other uses within the campus of the District.

Additionally, approximately 50% of the installed printers are obsolete; as they are Apple brand printers and other printers that are becoming irreparable.

It will be both cost and labor prohibitive to replace all of these computers at one time. It is recommended that computers and printers be replaced on a four year replacement cycle.

Hardware	Quantity	Priority	Implementation	Estimated Cost
Macintosh Power Mac/PC 5000 Series	1,116	1	2005-2007	\$279,000
Intel Pentium I PCs	227	2	2005-2007	\$56,750
Macintosh G3s and G3 iMacs	1,238	3	2007-2008	\$928,500
Replace Printers (all models)	420	3	2007-2008	\$315,000
Intel Pentium II PCs	1,595	4	2007-2008	\$1,196,250
Macintosh G4 iMacs	148	5	2007-2008	\$111,000
Intel Pentium III PCs	1,392	6	2008-2009	\$1,044,000
Intel Pentium III PCs (note 1)	1,343	6	2008-2009	\$1,007,250
Replace Printers (all models)	420	6	2008-2009	\$315,000
Intel Pentium IV PCs	1,616	7	2009-2010	\$1,212,000
Annual 3-year Replacement	7,107	8	2010-2014	\$5,330,250
Total Computers	16,622			\$11,795,000

Note 1 – includes Pentium III PCs used to replace obsolete computers in 2005-2007 school years

Note 2 – includes approximately 900 Pentium IV computers anticipated to be added to the installed base

Table 5

Plan: Provide Mobile Computing for High School Students

In addition to providing sufficient computers to meet the standards for providing base level technology support, funding should be identified to provide high school students with mobile computing capability. A pilot program will be developed at one high school for one year. If successful, the program will be expanded to all District High Schools.

Implementation Phase	Quantity	Implementation	Estimated Cost
Pilot-1 grade level at 2 High Schools	800	2009-2010	\$800,000
Pilot-1 grade level at 2 High Schools	800	2010-2011	\$800,000
1 grade level at 5 High Schools	2,000	2011-2012	\$2,000,000
1 grade level at 5 High Schools	2,000	2012-2013	\$2,000,000
1 grade level at 5 High Schools	2,000	2013-1014	\$2,000,000
1 grade level at 5 High Schools	2,000	2013-1014	\$2,000,000
1 grade level at 5 High Schools	2,000	2013-1014	\$2,000,000

Table 6

Plan: Upgrade Campus Networks

The School Facilities Board has provided the funding to upgrade the campus area networks at all 37 District sites. The project was designed to insure that all District “networked” devices will have a high-speed connection to the District Wide Area Network (WAN) and to the Internet. Every campus should have a 1 Gbs backbone and switched 10/100 Mbs to the workstation.

However, the scope of this project was to provide connectivity for only the devices found to exist at the time of the design walkthrough by the Qwest contracted network engineers. Any new devices added after the design walkthrough did not necessarily have connectivity made available. As the needs of the District expand, there will still be “moves, adds, and changes” required to the campus cabling plant and network infrastructure at many District sites. In order to service these requirements, a budget for additional cabling and network electronics comparable to the electronics provided by this project will be required.

Switches and servers will need to be placed on a seven year replacement program.

Implementation Phase	Implementation	Estimated Cost
Phase I	2008-2009	\$ 520,000
Phase II	2009-2010	\$ 520,000
Annual Replacement Program	2010-2014	\$3,120,260

Table 7

Plan: Increase Bandwidth on the Wide Area Network

The District is currently leasing network facilities from Qwest on a five-year contract that is due to expire at the end of the 2008-2009 school year. This date will coincide with the Proposition 301 provision to end the ability to budget for excess utilities outside of the District budget limit for Maintenance and Operations. Upgrades within the Qwest network would not extend this contract. However, conversion to a different network prior to the expiration of the Qwest contract would incur termination penalties.

Due to the expected increase in bandwidth demands for video streaming, increased usage of web delivered applications, and Distance Learning/Teleconferencing a significant upgrade to the existing network, or conversion to a new network will be needed beginning in the 2009-2010 school year.

There are five basic options for increasing bandwidth on the network:

- ◆ Increase the bandwidth on the existing Qwest leased network
- ◆ Upgrade/convert to a Qwest provided leased Optical Ethernet network (QMOE)
- ◆ Convert to a Cox Communications leased Optical Ethernet network
- ◆ Construct a District-owned fiber Optical Ethernet network
- ◆ Construct a District-owned wireless network

The following table summarizes the relative advantages and disadvantages for each of these options:

Network Option	Advantages	Disadvantages
Increase existing Qwest network	Low cost, simple transition	Moderate bandwidth increase, data is routed, leased utility cost
Upgrade to Qwest OE (QMOE)	Cost approximately the same as existing network, Maximum Bandwidth, data is switched	Complex transition, leased utility cost, extends existing contract for additional 5 years
Convert to Cox OE	Lower cost than existing network, Maximum Bandwidth, data is switched	Complex transition, leased utility cost, extends existing contract for additional 5 years
Convert to District-owned OE	No utility cost, maximum bandwidth, data is switched, potential for outside revenue	Very high capitalization cost, very complex transition, minimum 2 year construction time
Convert to District-owned Wireless	No utility cost, moderate transition, moderate construction time,	High capitalization cost, moderate bandwidth increase, potential line of sight issues, data is routed

Table 8

The implementation timeline and costs for construction and annual maintenance, or lease, of each of the network upgrade/conversion options are shown in the following table. The costs are based on proposals received. Proposals need to be obtained from Qwest before final decisions can be made:

Network Option	Possible Implementation	Construction Cost	Lease Cost	Maint Cost
Increase existing Qwest network	2006-2007	No Cost	To be Determined	No Cost
Upgrade to Qwest OE (QMOE)	2006-2011	\$ 333,400	\$1,216,320	No Cost
Convert to Cox OE	2006-2011	No Cost	\$ 1,727,640	No Cost
Convert to District-owned OE	2009-2011	\$16,000,000	No Cost	\$ 729,600
Convert to District-owned Wireless	2009-2011	\$ 4,830,000	No Cost	\$ 580,000

Table 9

Update: based on proposals received, the District will implement the Upgrade to Qwest Optical Ethernet (QMOE). This will provide 100 Mbs bandwidth to each elementary school (increased from 12 Mbs), 1000 Mbs (Gigabit) bandwidth to each middle school (increased from 12 Mbs), 1000 Mbs (Gigabit) bandwidth to each high school (increased from 45 Mbs), and 1000 Mbs (Gigabit) to each district office location (increased from 1.5 Mbs). This implementation has started in 2007-2008 with full utilization during the 2008-2009 school year.

Plan: Replace District Voice Systems

The District is currently providing phone service through the Qwest Centrex network. Each District site has either a Vodavi or Iwatsu key system; with the exception of two campus' that have an implementation of Cisco's Voice over IP. These systems are approximately two years old.

Replacement of these key systems and VOIP systems will be coordinated with the upgrade/conversion of the data network. Replacement systems will be TDM specifications with an upgrade path to VOIP. Replacement systems will include state-of-the-art voice mail systems.

Implementation of the new phone systems will be phased in according to the following table:

Implementation Phase	Implementatio n	Estimated Cost	Maint Cost
Replace Vodavi key systems and centralize voice mail	2008-2009	\$ 200,000	\$ 93,000
Phase I – 50% Implementation of new system	2013-2014	\$ 1,370,000	\$ 93,000
Phase II – 50% Implementation of new system	2014-2015	\$ 1,370,000	\$ 382,500

Table 10

Plan: Replace District Intercom Systems

All campus intercom systems except four are in excess of twelve years old. These systems will need to be replaced as soon as possible, as it is now difficult to obtain repair parts for them.

Implementation of the new intercom systems will be phased in according to the following table:

Implementation Phase	Implementation	Estimated Cost	Maint Cost
First 10 Campuses	2007-2008	\$ 500,000	\$ 75,000
Second 10 Campuses	2008-2009	\$ 500,000	\$ 75,000
Final 9 Campuses with older systems	2009-2010	\$ 450,000	\$ 67,500
Four campuses with relatively new intercom systems	2010-2011	\$ 200,000	\$ 30,000

Table 11

Plan: Implement an Automated Software Distribution and Inventory System

In general, the current method for installation and distribution of software for workstations is a manual process. A software "image" is created that contains the standard issue of supported software and committed to CD's. These CD's are then duplicated and distributed to Tech Services and Campus Technicians for use when servicing computers. Due to the large variety of workstation makes and models in use throughout the District, and the spectrum of peripherals and inherent chip sets, there are many versions of this "image" in existence at any given point in time. This causes an endless cycle of re-creating new images, duplicating CD's, and distributing them.

Another critical piece is the ability to inventory and track software and hardware configurations remotely.

Alternative methods are being explored to distribute and update software, and track software/hardware, over the network. One possible solution is already licensed by the District: Novell's Zenworks.

A migration from Novell Netware 5.1 to Netware 6.5 is currently in progress. This migration will include the latest version of Zenworks. The migration is planned to be completed by the end of the 2005-2006 school year. As this migration progresses, Zenworks will be tested for suitability for distribution and update of workstation software.

An additional benefit of using Zenworks is that workstation hardware and software can be inventoried on an automated basis. This will be tested for suitability as well.

If Zenworks is not a viable solution, then other products will need to be evaluated.

Collaboration

Initiative: Provide computer based collaboration tools to allow school administration, faculty, students, and external groups to better communicate and share information and ideas.

Plan: Provide Training to better utilize existing Collaboration Tools

The District currently utilizes Microsoft Outlook Exchange for email, calendaring, and task management. The suite of applications can be leveraged to provide a media improved collaboration and communication for staff. However, District staff has never been properly trained on the use of advanced functions of MS Outlook. An extensive training program for all staff will need to be developed and conducted. The training program should be on-going for new staff and for refresher training for continuing staff.

This training program will begin in the 2005-2006 school year, and will cost approximately \$ 75,000 per year for the first three years. This will train approximately 1000 staff per year. Each year subsequent will cost approximately \$ 20,000 for training approximately 200 staff per year.

As more staff and students have accessibility to PC/Tablet technology, Microsoft OneNote can be leveraged for its collaboration capabilities.

Additionally, the eLearning courseware Knowledge Box provides opportunities for teaching staff to develop lesson plans and content that can be shared with other teaching staff District-wide. As training is provided on the use of Knowledge Box, this kind of collaboration can begin.

This training will begin in the 2005-2006 school year; and the costs are absorbed in the eLearning implementation costs.

Plan: Commission a Study to Identify Additional Collaboration Opportunities

There are many other collaboration tools and methods available. A consultant will need to be commissioned to assist District staff to identify those tools and techniques that can benefit the district the most. Upon completion, the results of this study will be added to this Technology Plan.

The study will be commissioned in the 2007-2008 school year and will cost approximately \$ 15,000 to complete. The expected result of the study will be some type of Learning Management System with monitored email, instant messaging, message board and content delivery capabilities. Expenditures for collaboration software will be funded from the anticipated software funding.

Distance Learning/Teleconferencing

Initiative: Implementation of Video Technologies to deliver training, instruction, and link offices and schools for teleconferencing and Distance Learning opportunities.

Background

It is the desire of the District to be able to provide quality education and course instruction on all subjects to all students, regardless of geographic location. By providing Distance Learning opportunities, students and staff can participate in courses of instruction that are not offered at the home campus site. The Distance Learning opportunity would not be limited to “importation” from other campuses within the District; quality course instruction could be delivered from community colleges, universities, and other learning institutions. Conversely, campuses that have unique teaching resources can “export” that teaching to other sites; both in-district and out-of-district.

Additionally, these same facilities can be used to generate Teleconferencing opportunities. Use of Teleconferencing techniques should result in trip reduction within the District, and more efficient utilization of District facilities and employee time. Virtual meetings can be broadcast to large numbers of staff without the commitment to large meeting rooms.

The current District wide area network has sufficient communications bandwidth available to implement Distance Learning Opportunities for our high schools. There is adequate bandwidth available on the network for elementary schools and middle schools to participate in Distance Learning on a more limited basis. As Distance Learning becomes a more prominent instructional delivery system, bandwidth on the wide area network will need to be increased.

Plan: Provide Facilities for Distance Learning/Teleconferencing

Distance Learning technologies are becoming more mobile and less expensive, requiring less infrastructure and less space commitment. As the high schools are being remodeled, space and infrastructure is being constructed to provide for Distance Learning. These facilities will be located such that the activities can be monitored by certified staff. All Distance Learning facilities should provide for two-way audio and video to facilitate question and answer and to stimulate class interaction regardless of geographic location.

Two high school sites and one district office site will be implemented during the 2007-2008 school year. This should include portable distance learning classroom systems to capture instruction in a standard format classroom. It is often more desirable to deliver content from a standard classroom, rather than moving the entire classroom into a distance learning lab.

The additional high school sites, including the Sierra Vista Academy, will be implemented during the 2008-2009 school year. Additionally, a centralized management system will be installed to remotely manage the Distance Learning systems and assist staff who are experiencing difficulties. Full District implementation will begin during the 2009-2010 school year by adding 30 receiving sites and a centralized scheduling system. The scheduling system will provide the ability to schedule and orchestrate classes, conferences, facilities reservations, etc.

Administrative use of these facilities for Teleconferencing can begin once student instruction is implemented.

The implementation timeline and costs for construction of Distance Learning/Teleconferencing facilities are shown in the following table:

Implementation Phase	Implementation	Estimated Cost	Maint Cost
Pilot – three sites	2008-2009	\$ 240,000	\$ 13,500
Four sites w/ Centralized Management System	2009-2010	\$ 335,000	\$ 19,275
Thirty sites w/ Centralized Scheduling System	2010-2015	\$ 927,170	\$ 91,250

Table 12

Training

Initiative: Provide adequate training to all staff on the use of technology; and to appropriate staff for the support of technology.

Background

In addition to the training provided to staff through Professional Development, specific training is needed on technology subjects. A training program will be needed to address the following technology specific areas:

- ◆ Training for all certified staff in the use of new and existing Instructional Programs.
- ◆ A training program for all District staff in the use of administrative systems.
- ◆ Training for technology staff in the support of all instructional and administrative systems.

Plan: Restore the Instructional Technology Specialist (ITS) Program

The ITS program will be responsible for providing and directing training to certified, classified and administrative personnel on a wide range of topics, including: administrative software, Microsoft Office products, and software/hardware that allow teachers to expand the use of technology in their classrooms. The course content and format will need to remain dynamic in order to adapt to the rapidly changing face of technology. The ITS staff will be composed of certificated staff, and the main focus will be to encourage the integration of technology with the core content areas.

A pilot phase of this program would include offering professional staff development courses during the 2005-2006 school year and would continue to develop and refine courses. A fully developed staff development program should be ready to implement during the 2006-2007 school year. An outline of proposed staff development goals is provided in Appendix C.

Instructional Technology Trainers – In order to maximize training dollars, some classified trainers will be utilized to help with the training of productivity and administrative software. These staff members will work with the ITS staff to meet training needs for all SUSD staff.

Instructional Site Trainers – An important aspect of successful training is timely response for questions regarding software and hardware usage. In order to provide this timely support, a staff of teachers will be offered stipends to assist with training staff at their individual sites, and to answer questions regarding those trainings.

Summer Training – It is often easier to train administrators and classified staff, as well as teachers, during the summer months. Some of the Training staff listed above will need to be funded for the summer months to provide this training.

The following two tables illustrate the spectrum of training that would be offered by the ITS Program:

Framework for Instructional Technology Training

Classroom Teacher Instruction	New Teacher Training	Administrative Training	Classified Training	Other Contributions to District Technology
Outlook (Advanced)	Outlook	Outlook (Advanced)	Outlook	Instructional Technology Resource Web Page
Genesis	Genesis	Genesis	Intranet Use of network	Assist in Evaluation of Software and Training
EZ Grade Pro Online	EZ Grade Pro Online	Intranet Use of network		Evaluation/Integration of Outside Resources
Intranet Use of network	Intranet Use of network	Specialized Administrative Software Programs		Resolution of Classroom Technology Issues
	MS Office	Flex-Tech Training Pilot		

Table 13

Teacher Classroom Integration Instruction

MS Advanced Features	Web Design	Multimedia	Educational Software	Online Resources
MS Word	MS Word Teacher Web Pages	Digital Photography	Inspiration	Integrating content specific sites into classroom
Instructional Uses of PowerPoint	MS Front Page	Digital Video	Learning.com	Marco Polo
Excel in the Classroom	Dream Weaver	Video Streaming	KnowledgeBox	District online resources
Publisher for Students	Flash	Image Manipulation	SuccessMaker	Web Quests
		Classroom Integration	NovaNET	ASSET resources

Table 14

There are currently three ITS staff and one eLearning Specialist in the table of organization. In order to provide a full training program for staff, an additional three Instructional Technology Specialists will need to be added and 5 ITT staff. This should be done no later than the 2006-2007 school year and will cost approximately \$350,000 to the Maintenance and Operations Budget. Stipends for Site Trainers can be funded using Title funds as long as they are available.

Plan: Provide Budget and a Training Program for Technical Staff

All technical staff should receive a minimum of 5 days of training per school year. Staff that work in the areas of software development and support, network and server operations, telecommunications and infrastructure, and instructional technology should receive a minimum of 10 days of training per school year.

Staffing

Initiative: Provide for adequate staffing in order to implement new technologies and maintain existing technologies.

Background

Over the past few years, there have been reductions in the technology staffing that have drastically reduced the ability to provide customer service and to progress to new levels of technological development. The repair backlog exceeds acceptable levels and infusion of new technologies to support both the teaching and administrative efforts has been absent. The technology staff was stripped of “middle management” further paralyzing our ability to address operational problems and direct daily workload.

Without the restoration of previous staffing levels, and additional staffing to support new technologies, the successful operation of technology in this District is at risk. Without augmentation of current staffing levels, technology initiatives for this District will not be achievable.

Plan: Redesign the Information Systems and Technology Organization

The Executive Director of Information Systems and Technology will work with District leadership to fund and implement a department redesign that will accomplish the following goals:

- ◆ Provide middle management to insure that daily operational issues are properly addressed and provide levels of contact for District staff.
- ◆ Augment customer service staffing levels to increase responsiveness to repair and support needs.
- ◆ Increase staffing to provide for the routine maintenance of technology equipment and infrastructure in a pro-active manner.
- ◆ Provide for the additional staffing that will be required to implement the growth in new technology called for by this Technology Plan.

Web Based Systems

Initiative: All new systems should be Web Based. Migration of administrative systems and instructional delivery systems to Web Based software systems will be necessary in order to reduce the District’s reliance on client based software.

Background

The trend in Modern Software development is to make applications “Web Based,” using a Web Browser as a “Thin Client” on the workstation itself. Web Based Applications provide the end-user with a standard, easy-to-use common interface that reduces training requirements for new applications. The end-user is provided with a simple method to transition from one application to another. Additionally, deployment of software changes and new versions of software is automated, instead of the labor-intensive method of manual installation of client software on workstations. Web based clients should be used for initiation and viewing of data by the end-user. A client of the actual application may need to be deployed for those end-users responsible for approvals and manipulations of the application database.

Plan: Replacement of Mission Critical Administrative Software Systems

The following administrative systems will need to be replaced with new Web Based systems:

- ◆ SASIxp Student Information System – SASIxp is in the process of being replaced with a new web based Student Information System named Genesis
- ◆ CIMS Financial Management System
- ◆ HMS Human Capital Management System
- ◆ Employee Time Keeping (currently manual system)
- ◆ Athena Library Management System

Procurement and implementation timeline and costs for these new systems will be as shown in the following table:

Application System	Implementation Phase	Estimated Cost	Maint Cost
Student Information System (Genesis)	2005-2006 (in-progress)	\$ 575,000 (actual)	\$ 67,270 (average)
Library Management (Destiny)	2007-2008	\$ 100,000	\$15,000
Finance and Accounting (Visions Enterprise)	2006-2009	\$ 1,500,000	\$225,000
Payroll and Human Resources System (Visions Enterprise/Winocular)	2006-2009	\$ 500,000	\$ 75,000

Table 15

Security

Initiative: Provide for physical security and security surveillance measures where ever students will be to help ensure a safe learning environment.

Plan: Design and Construct Security Systems for the High School Campuses.

The District has contracted with a Security Consultant, as part of the High School Remodel Bond, to develop and construct physical security systems for the High Schools. Additionally, as a result of this activity, the District will have specifications and standards for providing security systems to other campuses in the future.

Security systems for four of the high schools will be implemented as part of the 2004 Bond Project. These will be installed in the 2006-2009 time-frame, as these four campuses are completed. The costs will be budgeted as part of the Bond Project.

Implementation of security systems at the rest of the campuses will be phased in according to the following table:

Number of Campuses	Implementation	Estimated Cost	Maint Cost
One High School, SVA, and Three Middle Schools	2007-2008	\$ 280,000	\$ 42,000
Four Middle Schools	2008-2009	\$ 200,000	\$ 30,000
Ten Elementary Schools	2009-2010	\$ 300,000	\$ 45,000
Ten Elementary Schools	2010-2011	\$ 300,000	\$ 45,000

Table 16

Paperwork Reduction

Initiative: Implementation of an Electronic Document Management System to reduce the handling and storage of paper systems.

Background

By implementing an Electronic Document Management System (EDMS), the District will move closer to a “paperless administration.” While it will not be possible to completely eliminate paper processes and records, certainly all strategic paper flow and storage requirements must begin utilizing EDMS.

The most evident effect that EDMS will have on the District will be the direct reduction of physical storage requirements for paper files. Expensive office space now used for the “warehousing” of files can be returned to use by staff. Electronic Storage of records will also provide a means for more timely and accurate retrieval of records. Files can be quickly found and conveyed electronically to where the information is needed. Additionally, the information can be shared and viewed by multiple users in different locations without having to make physical copies of a single file.

The most dramatic affect that EDMS will have on the District will be in the ability to improve the routing of paperwork. Initiation and approval of requests for all kinds of activities will move more timely and precisely through defined procedures than is now possible. Additionally, there will be a drastic reduction in “lost” paperwork.

Plan: Implementation of an EDMS

The District will acquire and implement an EDMS and select two applications to pilot: one “Storage and Retrieval” application, and one “Work Flow” application.

Possible applications that would benefit from EDMS automation include:

- ◆ Human Capital – Personnel Action Forms (workflow)
- ◆ Student Cumulative Record Folders (Storage and Retrieval)
- ◆ Student Special Education Record Folders (Storage and Retrieval)
- ◆ Personnel Record Folders (Storage and Retrieval)
- ◆ Applicant Records (Storage and Retrieval)
- ◆ Travel Requests (workflow)
- ◆ Absence Reports (workflow)
- ◆ Property Management Transfer forms (workflow)

These processes will need to be prioritized and developed within EDMS at a rate of two applications per year, one workflow and one storage and retrieval. Implementation of EDMS applications will be phased in according to the following table:

Implementation Phase	Implementation	Estimated Cost	Maint Cost
Two Pilot Applications	2010-2011	\$ 250,000	\$ 45,000
Two Additional Applications	2011-2012	\$ 80,000	\$ 10,000
Two Additional Applications	2012-2013	\$ 80,000	\$ 10,000
Two Additional Applications	2013-2014	\$ 80,000	\$ 10,000

Table 17

Data Storage Environment

Initiative: Establishment of a data storage environment that will allow universal access to data regardless of application system or physical location, in order to improve management information to District leadership.

Plan: Commitment to an Enterprise Level Database

The acquisition of new software systems will require the District to commit to an enterprise level database and to a new data storage environment. All existing in-house applications should be rewritten or migrated to the new database.

Currently the District's primary financial and human capital systems are on an AS/400 platform using IBM's DB2 database. The Student Information System is in the process of being migrated from a proprietary data base to a Microsoft SQL database. The District has acquired commercially available applications that reside on either a Microsoft NT Server or a Microsoft Windows 200X Advanced Server platforms using Microsoft SQL for a database. Additionally, there are a large number of smaller applications developed in-house using FileMaker Pro as the database. There are currently no Data Warehousing tools or techniques implemented.

The following table shows existing software systems and the platform/database in use:

Application System	OS Platform	Data Base
Finance and Accounting	MS Win 200X	MS SQL
Human Capital and Payroll	MS Win 200X	MS SQL
Student Information System/ Genesis	MS Win 200X	MS SQL
Library Management	MS Win 200X	MS SQL
Transportation Routing	MS NT 4.0	Oracle
Substitute Teacher Calling System	MS Win 200X	MS SQL
Work Order Management	MS Win 200X	MS SQL
In-house Developed Apps	MS Win 200X	FileMaker Pro
Accelerated Reader	Novell Netware 6.5	Proprietary

Table 18

Plan: Implement Data Warehousing

Data Warehousing tools and techniques will be implemented in order to facilitate the extraction of meaningful management information from disparate systems and databases. Migration to a consistent Enterprise Level Data Base will delay the necessity for early acquisition of Data Warehousing tools.

A study has been completed to develop a high level design and estimate costs to implement a data warehouse. Offerings of the major providers were surveyed and best solutions recommended as a result of this study.

Procurement and implementation timeline and costs for construction of a data warehouse will be as shown in the following table:

Implementation Phase	Implementation	Estimated Cost	Maint Cost
Initial Proof of Concept	2012-2013	\$ 150,000	\$ 25,000
Full Implementation	2013-2014	\$ 550,000	\$ 90,000

Table 19

Plan: Replacement of Traditional Server Storage with Storage Area Networks/Network Attached Storage

Currently, data is stored on individual servers that support various software applications and are dispersed across the District. Each campus (33) is provided with a Novell Netware print and file server to support network operations and individual home directories for document and data storage. Additionally, each campus (33) is provided with a Microsoft Windows server to support the Library Management System. Centralized systems are supported with various servers, each with their own data storage capability to provide for that systems data needs. In total, there are 84 servers District wide support the application systems and data needs of the District.

Implementation of a Storage Area Network (SAN) with Network Attached Storage (NAS) will create a shared data environment that will support the implementation of data warehousing and data mining techniques.

In order to protect vital data resources, a centralized high speed, high density enterprise level backup system will be implemented that will be capable of securing all District data regardless of physical location.

Procurement and implementation timeline and costs for construction of a SAN/NAS environment will be as shown in the following table:

Implementation Phase	Implementation	Estimated Cost	Annual Cost
Enterprise Backup System	2005-2006	\$ 65,000	\$ 12,000
Initial Proof of Concept	2008-2010	\$245,000	\$ 20,000
Full Implementation	2010-2015	\$500,000	\$ 40,000

Table 20

Explore Technology Based Opportunities

Initiative: Collaboration with other entities to establish a Wireless Communications network within the District and City boundaries, generate instructional and training programs that would be of interest to organizations outside the district, and explore possible eBusiness opportunities.

Plan: Work with the City of Scottsdale Technology Leadership to Develop a Wireless Environment

The Executive Director of Information Systems and Technology for Scottsdale Unified School District will meet with the technology leadership for the City of Scottsdale and pertinent vendors to develop a plan to provide wireless communications across city and district boundaries. The goal would be to provide a wireless “umbrella” under which staff and students can gain access to network services regardless of geographic location in the District.

The cost and time-frame for this initiative will need to be developed.

Initiative: Generate instructional and training programs that would be of interest to organizations outside the district

Plan: Work with the Curriculum Leadership in the District to Develop Distance Learning and eLearning Opportunities that are “Exportable”

The Executive Director of Information Systems and Technology for Scottsdale Unified School District will work with the curriculum leadership and teaching staff to develop exceptional courseware that can be delivered via Distance Learning or over the Internet. The facilities will be available to deliver this courseware to outside organizations upon completion of the initiative for Distance Learning/Teleconferencing.

Initiative: Explore possible eBusiness opportunities.

Plan: Work with Vendors and Outside Organizations to Identify Specific Opportunities

The Executive Director of Information Systems and Technology for Scottsdale Unified School District will work with District leadership and vendors to identify opportunities to leverage existing District technology assets to provide revenue generating services. Possible services that could be provided to outside organizations include:

- ◆ Email services
- ◆ Network Bandwidth (if the District invests in the construction of a District-owned network)
- ◆ Hosting Data Warehouses

Summary of Capital Funding Requirements Seven Year Plan

Project	Project Total	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
Implement Technology Stds for Schools	\$5,754,840	\$ -	\$ -	\$2,292,200	\$1,326,610	\$1,387,210	\$499,810	\$249,010
Technology Enabled Classrooms	\$11,815,000	\$ -	\$ 2,363,000	\$ 2,363,000	\$ 2,363,000	\$ 2,363,000	\$ 2,363,000	\$ -
eLearning Courseware	\$13,696,200	\$1,956,600	\$1,956,600	\$1,956,600	\$1,956,600	\$1,956,600	\$1,956,600	\$1,956,600
Special Education Technology Plan	\$1,150,000	\$164,286	\$164,286	\$164,286	\$164,286	\$164,286	\$164,286	\$164,286
Communications with the Community	\$415,500	\$195,000	\$36,750	\$36,750	\$36,750	\$36,750	\$36,750	\$36,750
Technology Refresh-Computers	\$10,334,250	\$2,550,750	\$1,241,250	\$1,212,000	\$1,332,563	\$1,332,563	\$1,332,563	\$1,332,563
Technology Refresh-Network	\$3,692,000	\$ -	\$520,000	\$520,000	\$624,000	\$780,000	\$780,000	\$468,000
Mobile Computing	\$7,600,000	\$ -	\$ -	\$800,000	\$800,000	\$2,000,000	\$2,000,000	\$2,000,000
Wide Area Network	\$8,631,320	\$ 1,000,000	\$ 1,549,720	\$ 1,216,320	\$ 1,216,320	\$ 1,216,320	\$ 1,216,320	\$ 1,216,320
New Phone System	\$3,508,500	\$ -	\$293,000	\$ -	\$ -	\$ -	\$1,463,000	\$1,752,500
New Intercom Systems	\$2,835,000	\$500,000	\$575,000	\$600,000	\$417,500	\$247,500	\$247,500	\$247,500
Distance Learning/Teleconf	\$1,874,895	\$ -	\$240,000	\$348,500	\$496,360	\$541,985	\$124,025	\$124,025
Student Info System-Genesis	\$604,250	\$83,025	\$85,100	\$87,225	\$87,225	\$87,225	\$87,225	\$87,225
Finance, Payroll, and HC System	\$3,500,000	\$1,250,000	\$750,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
Employee Time Accounting System	\$900,000	\$ -	\$250,000	\$250,000	\$100,000	\$100,000	\$100,000	\$100,000
Library Management System	\$179,000	\$41,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000	\$23,000
Campus Security Systems	\$1,822,000	\$280,000	\$242,000	\$377,000	\$422,000	\$167,000	\$167,000	\$167,000
Electronic Document Management System	\$655,000	\$ -	\$ -	\$ -	\$250,000	\$125,000	\$135,000	\$145,000
Data Warehouse	\$725,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$150,000	\$575,000
Data Storage Systems	\$1,129,000	\$257,000	\$282,000	\$302,000	\$72,000	\$72,000	\$72,000	\$72,000
Totals	\$80,821,759	\$8,277,661	\$10,571,706	\$12,848,881	\$11,988,214	\$12,900,439	\$13,218,079	\$11,016,779

Note: Average Cost per year = \$ 11,545,965

Appendix A

Technology Standards for Schools, Labs, Classrooms, and Media Centers

Elementary Schools:

- ◆ 2 Hardwired Check Out Labs – 33 student computers plus 1 teacher computer, 1 workgroup printer plus 1 color printer, 1 Intelligent white board, 1 ceiling mounted projector, classroom amplification
- ◆ 1 Mobile Lab – 2 carts with 17 mobile computers plus 1 printer on each
- ◆ 1 TV Production System – Upgrade (if existing) or new if campus does not currently have one
- ◆ 1 Portable classroom amplification system with 2 wireless microphones
- ◆ 1 Mobile Projector
- ◆ 2 mobile writing labs with handhelds for word processing and keyboarding
- ◆ 1 Mobile Cart per grade level for grades 3 through 6
- ◆ Classrooms – 1 Teacher PC/Tablet, 3 student computers, classroom amplification, SmartBoard, document camera, Intelligent white board, ceiling mounted projector
- ◆ Media Center – 16 student computers, 2 Librarian computers, 1 color printer, classroom amplification, mobile/mounted projector, Intelligent white board, 15 writing handhelds for student home check out

Middle Schools:

- ◆ 2 Hardwired Check Out Labs (plus additional lab for enrollment allowance) – 34 student computers plus 1 teacher computer, 1 workgroup printer plus 1 color printer, 1 Intelligent white board, 1 ceiling mounted projector, classroom amplification
- ◆ 1 TV Production Studio – Upgrade (if existing) or new if campus does not currently have one
- ◆ 1 Portable Audio Enhancement System with 2 wireless microphones
- ◆ 3 Mobile Projectors
- ◆ 1 mobile pre-writing lab per grade level with handhelds
- ◆ 1 Mobile Lab Cart with 17 mobile computers plus 1 printer per grade level per core content
- ◆ Classrooms – 1 Teacher PC/Tablet, 8-12 student computers per teaching team, classroom amplification, ceiling mounted projector. Distribution of computers will vary by campus.
- ◆ Media Center – 32 student computers, 4 Librarian computers, 1 color printer, classroom amplification, mobile/mounted projector, 30-60 pre-writing handhelds for student home check out

High Schools:

- ◆ 1 Hardwired Check Out Lab per core content – 35 student computers plus 1 teacher computer, 1 workgroup printer plus 1 color printer, 1 Intelligent white board, 1 ceiling mounted projector, classroom amplification (4/school, and 6 at DMHS)
- ◆ 1 TV Production Studio – Upgrade (if existing) or new if campus does not currently have one
- ◆ 1 Portable classroom amplification system with 2 wireless microphones
- ◆ 3 Mobile Projectors
- ◆ 2-4 labs with pre-writing handhelds (delete)
- ◆ 2 Mobile Lab Carts per major content area (delete)
- ◆ Classrooms – 1 Teacher PC/Tablet, classroom amplification, Intelligent white board, ceiling mounted projector
- ◆ Media Center – 40 student computers, 4 Librarian computers, 1 color printer, classroom amplification, mobile/mounted projector

Note- HS laptop program reduces need for some labs at HS level. Delete 2 mobile lab carts per content area, and/or delete some wired check out labs. It would be possible to delete the carts, and the machines for the wired lab. If lab rooms remain available, they could have wired network and, more importantly, power sources for the laptops. Students could bring in their district assigned laptops for use in the labs, and be charging their battery while working.

A few wired labs will still be necessary with special software – for instance, web authoring software, video editing software, and graphics software. This type of software is generally not available as web-based applications. There are currently enough labs that will be replaced under technology refresh section to meet these needs.

Also, delete the 2-4 labs of pre-writing handhelds.

Appendix B**Cost to Implement Technology Standards for Schools**

<u>Technology Standards</u>	<u>Qty</u>	<u>Cost</u>	<u>Total</u>
Mobile Carts-Elementary	68	\$20,000	\$1,360,000
Mobile Carts-Middle Schools	92	\$20,000	1,840,000
Mobile Labs-High Schools (delete)	5	\$40,000	
Add'l Mobile Carts-High School (delete)	50	\$20,000	
Video Production System - Elementary	20	6,000	\$120,000
Video Production Studio	13	\$15,000	\$195,000
Portable classroom amplification	33	\$1,000	\$33,000
Mobile Projector	56	\$1,200	\$67,200
Handheld Labs-Elementary	40	\$10,000	\$400,000
Handheld Labs-Middle Schools	7	\$10,000	\$70,000
Handheld Labs-High Schools (delete)	20	\$10,000	
Media Center-Elementary	20	\$25,000	\$500,000
Media Center-Middle Schools	7	\$35,000	\$245,000
Media Center-High Schools	5	\$30,000	\$150,000
Total Cost for School Campuses			\$4,980, 200

Cost to Implement Technology Enabled Classrooms

<u>Technology Enabled Classroom</u>	<u>Qty</u>	<u>Cost</u>	<u>Total</u>
Teacher PC/Tablet	1,500	\$1,100	\$1,650,000
Student Computers-Elementary	1,800	\$750	\$1,350,000
Student Computers-Middle Schools	500	\$750	\$375,000
Wireless campus-Elementary	20	\$15,000	\$300,000
Wireless campus-Middle School	7	\$20,000	\$140,000
Wireless campus-High School	5	\$30,000	\$150,000
Wireless campus-SVA	1	\$10,000	\$10,000
Wireless DO locations	4	\$10,000	\$40,000
Ceiling mounted projectors	1,290	\$1,800	\$2,322,000
Enhanced Audio	1,290	\$1,500	\$1,935,000
VHS/DVD	1,290	\$300	\$387,000
Intelligent white board capability	1,290	\$2,000	\$2,580,000
document camera	1,290	\$200	\$258,000
Closed captioning equipment	33	\$2,000	\$66,000
Total Cost for Classrooms			\$11,563,000.00

Appendix C

Staff Development Goals

1. Develop a master plan for Instructional Technology
 - a. Gather information about the needs of district employees and students.
 - b. Develop a course framework to meet the needs of all stakeholders
 - c. Plan and write courses that fit within the framework
 - d. Correlate that framework with state and national standards
 - e. Develop a plan to assist entire campuses with technology integration on a multiple day basis
2. Offer courses to employees beginning 2005-2006 school year
 - a. Develop and offer courses in current areas of need – Outlook, EZ Grade Pro, SASI, teacher web sites
 - b. Develop and offer new courses integrating technology in the content areas
 - c. Pilot new courses
 - d. Offer training to new teachers in classroom and administrative technology use
 - e. Develop and begin to offer multi-level courses for current teachers. These will help meet the need for Career Ladder, salary advancement, and re-certification hours
 - f. Provide training for classified staff in administrative technology use
 - g. Provide training for administrators in administrative technology use
3. Develop an incentive plan similar to the Intel Teach to the future program, so that motivated teachers are rewarded with classroom technology.
 - a. Develop a possible plan to evaluate and compensate teachers for current, self-taught technology skills as part of the incentive plan.
4. Investigate and evaluate training opportunities provided by outside agencies, and make recommendations for expenditures in this area.
5. Communicate with other district entities by attending appropriate meetings and communicating with leaders. This would include ITLT, other Instructional groups and TOA's, principals, technology teachers, Staff Development Committee, etc.
6. Develop and maintain a web site that would provide basic instructions, resources and downloads for teachers and staff.
7. Investigate outside classroom instructional content and incorporate this into the SUSD Instructional program where appropriate.
8. Make recommendations for 2006-2007, regarding further staffing of the Instructional Technology department.

Incentive Plan for Teachers

The Intel Program was very successful in changing how teachers use technology in the classroom. Our Instructional Technology plan will be based on this proven model.

The success of the program was due to two major factors. The first factor was the motivation of the teachers to acquire new computers for their classroom. It is our hope that we can duplicate that motivation in our own Instructional Technology plan. The second factor was the requirement that the teachers commit to a 40-hour sequence of instruction over a fairly short time period. While it will not be possible to require this level of commitment, the model of extended trainings will be incorporated into our plan

Motivation - Most of our teacher computers in the district will need to be replaced in the next few years. We have already set the precedent in the district of giving the newest technology to the most tech savvy users, and to those who have taken extra classes. When we purchased new computers as part of the equity reassessment process, the new computers went to the Intel teachers, and the older ones were then passed on to the teachers who had not taken extra classes. The replacement of computers will probably be at least a three-year program. It would make sense to award the new computers to those teachers who have completed a program of study that would allow them to make full use of the new

technology. A replacement teacher computer would be the reward for the first phase of the incentive program. A second phase reward would probably be a ceiling mounted projector, followed by classroom amplification. These are items that will almost certainly end up in the technology plan, and the goal would be complete implementation across the district. The incentive for the teachers is to be the first to acquire the new technology. The targeted end result of the incentive plan is the development of technology leaders on all campuses.

Instructional sequence - The Instructional Technology plan will be organized as a multi-level, structured-sequence, multiple-thread plan. In order to achieve the rewards, teachers must complete a certain number of courses at each level that follow a certain content strand. At the completion of the strand, they will be very well educated in that area of technology. The entire program will be developed over time, and adjusted and modified as the needs of the district change. Completion of a strand, and subsequent rewards should require 35-40 hours of instruction.

All courses will be divided into one of three levels – novice, intermediate, and expert. Teachers who already possess the competencies of the lower level courses may choose to take the courses, or skip them after demonstrating competence to the Instructional Technology Staff. While we cannot reward teachers for their current knowledge with staff development, re-certification, or career ladder hours, we can allow them to advance faster in the incentive program. Pre- and post-course evaluations based on course competencies will be developed for all courses.

In addition to classifying courses by difficulty level, there will be specific content strands designed into the course offerings. For example, there would probably be content strands in the areas of web page development, in Microsoft Office, and in multimedia in the classroom. While there would be specific courses in each area, a course on digital images would likely be applicable to all three strands. There would probably also be a strand in administrative tools. A teacher who completed this strand would have had training in email, Genesis, and electronic grade books, in addition to basic courses in using the internet, district servers and efficient use of computers. Outside courses, such as ASSET, Marco Polo, or university classes can be submitted for inclusion into strand completion, and some would even be written into strands as recommended classes. Courses taught on site, by site staff would also be eligible for inclusion in strands.

Woven into all of the strands would be a certain number of open-lab hours. This was implemented for one month in the summer of 2001. The feedback from the teachers that took advantage of the open lab was that it was the most useful course they ever took. The open lab concept is designed to have designated hours when a teacher can come into a lab which is supervised by Instructional Technology staff, and work on any project they desire, knowing that they have support for that work. This is a time when they can come in and work on a web page, or figure out how to use a digital microscope, or apply what they have learned directly to their classroom situation. It was invariably a time that allowed a teacher to stretch their technology expertise, and gave them time to actually begin the work. It was also a time to learn about topics that do not fit neatly into other courses.

New Teachers -Teachers who are new to the district invariably end up with the worst technology on their campus, as they get whatever is left over. For new teachers, there would be an accelerated track that would result in a new computer in a shorter time period. This track would only be for new teachers, and would be similar to the strand in administrative tools. It might also include giving them the computer after the first few courses, so they would be have the technology necessary to complete the rest of the courses.

Incentive Plan for Classified Employees

The program for classified employees would be similar to the administrative strand for teachers. These employees will also require new computers in the near future, and if we can encourage them to take classes in order to be the first to get their computer, we would be making a significant contribution to the efficient operation of the district. An issue to be resolved is the legality of hourly employees taking classes outside of the normal workday. We can adjust class schedules to accommodate whatever decisions are made in this area.

The Incentive Plan for Sites

Often, individual sites set technology goals, perhaps in conjunction with a site improvement plan. Many times there are needs that develop for additional technology as a result of these plans. Under this portion of the incentive plan, a site would be able to create a training/implementation goal for the entire site, gain approval from the Technology and Instructional Technology departments, and be rewarded for the accomplishment of that goal. Possible rewards might include wiring of a new lab, a projector for a lab, or some new technology.