

***TAHOMA SCHOOL
DISTRICT

TECHNOLOGY

PLAN***

2004-2008

Submitted by the
Tahoma School District Technology Committee

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INTRODUCTION

The Tahoma School District recognizes that a strong technology plan is necessary for the successful and cost-effective implementation and integration of technology into the district and its curriculum. The effective use of technology by students is necessary for the district to meet the [Washington State Essential Academic Learning Requirements](#) and for our students to achieve the district's *Outcomes and Indicators (Appendix A)*. The incorporation of technology into the schools will provide our students with more of the tools they will need when they enter a workforce that is becoming increasingly dependent upon the acquisition and application of technical skills. We also recognize that technology can and should be used in the school system to improve efficiency and potentially reduce the costs for operating the district.

The mission of the Tahoma School District "...is to develop a 'learning community' where all students, staff and patrons continually teach and learn." This statement recognizes the district's responsibility in providing teaching and learning opportunities for the entire community. The Tahoma School District Technology Plan will enhance and in some cases enable the successful pursuit of our mission.

Background Information

The original Tahoma School District Technology Plan was approved by the Board of Directors in 1994 and revised in 1997 and 2000 and updated in 2003. During this time period, we have accomplished much of what was included in our technology vision. A few examples include:

- Students and staff have access to computers connected to a district-wide network with Internet access.
- Multimedia equipment such as projectors, scanners, digital cameras, and camcorders are available to students and staff.
- All staff have email accounts.
- School libraries have an electronic card catalogue and circulation system.
- Teachers utilize a Student Information System for taking attendance, submitting grades and accessing student information.
- Various service providers in the district including Transportation, Food Service, and Daycare are utilizing technology to improve their operations.
- A comprehensive instructional technology staff development program has been designed for certificated staff.
- The district wide-area network runs at 1000 bps. Local-area networks at each site are 10/100 bps switched Ethernet, TCP/IP with a 1000 bps backbone.
- District-wide standards are established for hardware/software configurations, network design and configuration, and equipment purchase, move and repair.

During the 2001/2002 school year, the Board directed that a district technology committee be established for the purpose of providing guidance and expertise in the continued deployment of technology throughout the district. This committee is comprised of both district staff and members of the community.

TECHNOLOGY VISION

Tahoma School District Mission Statement

“Our mission is to develop a ‘learning community’ where all students, staff and patrons continually teach and learn.”

Technology Vision Statement

Technology will play a key role in the success of our students. Student expectations are clearly defined by the Tahoma School District’s *Outcomes and Indicators* ([Appendix A](#)). Students are expected to become community contributors, collaborative workers, quality producers, self-directed learners, effective communicators, and complex thinkers.

Our vision regarding the use of technology in the Tahoma School District is as follows:

- Educational leaders will be the forerunners of implementation and support for integration of technology in all areas of building and district management; curriculum and instruction; and productivity.
- Instructional staff will acquire the knowledge, skills and abilities necessary for successful integration of technology into curriculum and instruction.
- Students will acquire the knowledge, skills, and abilities necessary to use technology appropriately and effectively in various settings and situations.
- Technology will be fully integrated across the curriculum.
- Staff will use technology as a means for improving the management and operation of the district.
- The district will use technology to enhance the connections and communications with the surrounding community.

The infusion of technology into the district is an ongoing process. To remain contemporary, the technology plan will be reviewed, evaluated and updated at regular intervals. Continued funding is required to support the execution of the plan. This vision will guide the decisions made regarding all facets of technology implementation.

TECHNOLOGY STANDARDS FOR STUDENTS

The Tahoma School District will implement the International Society for Technology in Education (ISTE) *Technology Foundation Standards for Students* which are recommended in the *Washington State Educational Technology Plan*. These standards apply to all students. The Tahoma School District is committed to providing the specialized technology required to address special needs.

1. Basic operations and concepts
 - Students demonstrate a sound understanding of the nature and operation of technology systems.
 - Students are proficient in the use of technology.
2. Social, ethical, and human issues
 - Students understand the ethical, cultural, and societal issues related to technology.
 - Students practice responsible use of technology systems, information, and software.
 - Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
3. Technology productivity tools
 - Students use technology tools to enhance learning, increase productivity, and promote creativity.
 - Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.
4. Technology communications tools
 - Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
 - Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
5. Technology research tools
 - Students use technology to locate, evaluate, and collect information from a variety of sources.
 - Students use technology tools to process data and report results.
 - Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.
6. Technology problem-solving and decision-making tools
 - Students use technology resources for solving problems and making informed decisions.
 - Students employ technology in the development of strategies for solving problems in the real world.

The ISTE Technology Foundation Standards for Students will be integrated into the curriculum by:

- Convening a Technology Summit that includes representatives from each building. The purpose of the summit is to determine the district's current state of instructional technology implementation and to make recommendations for the future.
- Providing training opportunities that emphasize how technology can support and enhance the district's *Standards for Quality Teaching and Learning* ([Appendix B](#)).

Timeline and Benchmarks

2004

- Convene a district-level Technology Summit for the purpose of generating a plan for implementing the Technology Standards for Students.

2004 – 2008

- Incorporate *Standards for Quality Teaching and Learning* ([Appendix B](#)) into the Tier 2 and Tier 3 technology staff development program.
- Implementation of the plan generated by the district's Technology Summit.

TECHNOLOGY STANDARDS FOR TEACHERS

The Tahoma School District will implement a revised version of the ISTE *Technology Foundation Standards for Teachers* which are recommended in the *Washington State Educational Technology Plan*. These standards were revised to reflect the needs and priorities identified by the Tahoma School District.

Each performance indicator has been rated based on level of implementation (B: Basic, I: Intermediate, A: Advanced). The Basic and Intermediate level performance indicators will be incorporated into Tier 2 and the advanced level performance indicators will be addressed in Tier 3 of the Technology Staff Development program.

1. Technology Operations and Concepts: Teachers demonstrate a sound understanding of technology operations and concepts.
 - Demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Education Technology Standards for Students). B
 - Demonstrate continual growth in technology knowledge and skills to stay abreast of current technologies. I
 - Demonstrate continual growth in technology knowledge and skills to stay abreast of emerging technologies. A
2. Planning and Designing Learning Environments and Experiences: Teachers plan and design effective learning environments and experiences supported by technology.
 - Manage technology resources within the context of learning activities. B
 - Plan strategies to manage student learning in a technology-enhanced environment. I
 - Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners. I
 - Apply current research on teaching and learning with technology when planning learning environments and experiences. A
3. Teaching, Learning, and the Curriculum: Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning.
 - Facilitate technology-enhanced experiences that address content standards and student technology standards. I
 - Use technology to support learner-centered strategies that address the diverse needs of students. I
 - Manage student learning activities in a technology-enhanced environment. I
 - Apply technology to develop students' higher order skills and creativity. A
4. Assessment and Evaluation: Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.
 - Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity. I
 - Apply technology in assessing student learning of subject matter using a variety of assessment techniques. I/A
 - Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning. A

5. Productivity and Professional Practice: Teachers use technology to enhance their productivity and professional practice.
 - Use technology resources to engage in ongoing professional development and lifelong learning. B
 - Apply technology to increase productivity. B
 - Use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning. B
 - Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning. I
6. Social, Ethical, Legal, and Human Issues: Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK-12 schools and apply those principles in practice.
 - Model and teach legal and ethical practice related to technology use. B
 - Promote safe and healthy use of technology resources. B
 - Facilitate equitable access to technology resources for all students. I
 - Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities. A

Timeline and Benchmarks

- | | |
|-------------|---|
| 2004 – 2005 | <ul style="list-style-type: none"> • Administer surveys and/or self-assessments for determining progress toward meeting these standards. • Design staff development opportunities based on survey/assessment results. • Incorporate teacher standards into Tier 2 and Tier 3 programs. |
| 2005 – 2006 | <ul style="list-style-type: none"> • Continue implementing staff development opportunities based on survey/assessment results. • All certificated instructional staff will be at a basic level or above. |
| 2006 – 2008 | <ul style="list-style-type: none"> • Incorporate these standards into all facets of instructional staff development. • 75 percent of all certificated instructional staff will be at an intermediate level or above. |

TECHNOLOGY STANDARDS FOR EDUCATIONAL LEADERS

“Despite the incredible investments that have been made in technology, we are very aware that without strong leadership at the highest level, schools will not use these technology funds and opportunities effectively. Whenever we ask schools that are leading the way in educational technology what is the main reason for their success, the most common answer is strong leadership from the superintendent and school board”

*- John Bailey
US Department of Education*

The Collaborative for Technology Standards for School Administrators (TSSA) has facilitated the development of a national consensus on what P-12 administrators should know and be able to do to optimize the effective use of technology. They believe that comprehensive implementation of technology is, in itself, large-scale systemic reform. Leadership plays a key role in successful school reform. These standards, therefore, focus on the role of leadership in enhancing learning and school operations through the use of technology.

The Tahoma School District will implement a revised version of the *Technology Standards for School Administrators* which are recommended in the *Washington State Educational Technology Plan*. These standards were revised to reflect the needs and priorities identified by the Tahoma School District.

Each performance indicator has been rated based on level of implementation. (B: Basic, I: Intermediate, A: Advanced)

1. Leadership and Vision: Educational leaders inspire a shared vision for comprehensive integration of technology and foster an environment and culture conducive to the realization of that vision.
 - Adopt the vision for technology use and widely communicate that vision. B
 - Facilitate the implementation of the district’s technology plan to achieve the vision. B
 - Use data in making leadership decisions. B
 - Foster and nurture a culture of responsible risk-taking and advocate policies promoting continuous innovation with technology. I
 - Encourage the use of research-based effective practices in use of technology. I
 - Advocate on the local, state and national levels for policies, programs, and funding opportunities that support implementation of the district technology plan. A
2. Learning and Teaching: Educational leaders ensure that curricular design, instructional strategies, and learning environments integrate appropriate technologies to maximize learning and teaching.
 - Provide for and ensure that faculty and staff take advantage of quality professional learning opportunities for improved learning and teaching with technology. B
 - Promote appropriate technologies to enhance and support instruction and standards-based curriculum leading to high levels of student achievement. I
 - Facilitate and support collaborative technology-enriched learning environments conducive to innovation for improved learning. I

- Provide for learner-centered environments that use technology to meet the individual and diverse needs of learners. I
 - Encourage the use of technologies to support and enhance instructional methods that develop higher-level thinking, decision-making, and problem-solving skills. I
3. Productivity and Professional Practice: Educational leaders apply technology to enhance their professional practice and to increase their own productivity and that of others.
- Model the routine, intentional, and effective use of technology. B
 - Employ technology for communication and collaboration among colleagues, staff, parents, students, and the larger community. B
 - Engage in sustained, job-related professional learning using technology resources. B
 - Maintain awareness of emerging technologies and their potential uses in education. I
 - Use technology to advance organizational improvement. I
 - Create and participate in learning communities that stimulate, nurture, and support faculty and staff in using technology for improved productivity. A
4. Support, Management, and Operations: Educational leaders ensure the integration of technology to support productive systems for learning and administration.
- Allocate financial and human resources to ensure complete and sustained implementation of the technology plan. B
 - Use integrated technology-based management and operations systems. I
 - Integrate strategic plans, technology plans, and other improvement plans and policies to align efforts and leverage resources. A
5. Assessment and Evaluation: Educational leaders use technology to plan and implement comprehensive systems of effective assessment and evaluation.
- Use technology to collect and analyze data, interpret results, and communicate findings to improve instructional practice and student learning. I
 - Assess staff knowledge, skills, and performance in using technology and use results to facilitate quality professional development and to inform personnel decisions. I
 - Assess and evaluate appropriate uses of technology resources for learning, communication, and productivity. A
 - Use technology to assess, evaluate, and manage administrative and operational systems. A
6. Social, Legal, and Ethical Issues: Educational leaders understand the social, legal, and ethical issues related to technology and model responsible decision-making related to these issues.
- Ensure access to technology resources that enable and empower all learners and educators. B
 - Communicate, model, and enforce social, legal, and ethical practices to promote responsible use of technology. B
 - Promote and enforce privacy, security, and online safety related to the use of technology. B
 - Promote and enforce environmentally safe and healthy practices in the use of technology. B

- Promote and enforce copyright law policies and assign ownership of intellectual property developed with district resources. B

Timeline and Benchmarks

- 2004 – 2005
 - Administer surveys and/or assessments for determining progress toward meeting these standards.
 - Design technology leadership training based on survey/assessment results.
- 2005, 2006
 - Conduct technology leadership training.
- 2006
 - All educational leaders will be at a basic level or above.
- 2008
 - All educational leaders will be at an intermediate level or above.

PROFESSIONAL DEVELOPMENT AND SUPPORT SYSTEM

Instructional Technology Teacher Training Web Site

The majority of the staff development described in this plan will be conducted in-district. This plan places priority on training instructional staff to successfully integrate technology into the curriculum. We also recognize the need to provide appropriate training opportunities for all staff. The staff development program will provide:

- The knowledge and skills necessary to integrate technology into the curriculum.
- Basic training in using the hardware and software available in the district.
- Appropriate follow-up and support in using technology successfully.

Basic Operational Training (Tier 1)

During the 2002/2003 School Year, all certificated staff were required to complete Tier 1. New staff will have two years to complete the requirements.

Requirements

All certificated staff must learn the Critical Skills identified for *Microsoft Windows*, *Microsoft Word* and *Microsoft Outlook* and apply the *basic* level Technology Standards for Teacher. These skills can be learned in a variety of ways including web-based tutorials created for each Critical Skill and/or by taking a 10-hour, 1 credit course designed to teach these skills. Individuals choose the method(s) they want to use to learn the Critical Skills.

Methods for learning the Critical Skills

- Course designed for introducing and practicing all of the Critical Skills.
- Self-paced instructional program (available via the district web site).
- Building-sponsored training sessions – Individual buildings can arrange to have on-site training.

Performance Assessment

The assessment activities cover a random subset of the Critical Skills for each software application. The assessments are performance based and will be completed on a computer.

Paraprofessional staff are invited and encouraged to take the Tier 1 Performance Assessments. Training can be obtained by taking the Tier 1 course, accessing the web-based instructional program, and/or scheduling workshop sessions during the school day using conference days, early-release days, etc.... Upon completing the Tier 1 requirements, paraprofessional staff will receive a Certificate of Completion.

Curricular Integration Training

In order to provide the training necessary for teachers to successfully integrate technology into the curriculum, the district is implementing a long-range technology staff development program. This plan includes training in using the core software programs available on district computers and how to use technology in the classroom to facilitate and enhance student learning. The technology staff development plan described below will provide instructional staff the training necessary to successfully integrate technology into the classrooms.

- **Tier 2:** Project Based Learning using Technology

The focus of Tier 2 is integrating technology into the existing curriculum. This includes an emphasis on instructional and classroom management practices that are conducive to technology integration. The experience is a process that can be directly applied to the classroom with a project-based, student-driven curriculum. Tier 2 classes will include instruction in applying the intermediate Technology Standards for Teachers.

Tier 2 consists of a 20-hour, 2-credit Project Based Learning course. Classroom teachers who complete this course will generate additional computers and/or other hardware items for student use in their classroom. Non-classroom certificated staff will generate equipment for their building.

- **Tier 3:** (Prerequisite is successful completion of Tier 2 requirements)

The focus of Tier 3 will continue to be the integration of technology into the curriculum. The Tier 3 program will include instruction in applying the advanced Technology Standards for Teachers. Classroom teachers who complete this course will generate additional computers to attain a 4:1 student to computer ratio. In classrooms where a 4:1 student to computer ratio is not necessary, other appropriate hardware items will be provided. The Technology Staff Development Advisory Group will define the requirements for Tier 3 during the 2003/04 school year. Tier 3 will be implemented during the 2004/05 school year.

Note on computer placement: All classrooms in the Tahoma School District have a minimum of two computers. To receive additional computers, classroom teachers must participate in the instructional technology training opportunities offered in the district. This staff development program emphasizes how to use technology effectively with students. Teachers who complete the training opportunities will have a 4:1 student to computer ratio in their classroom. This means that the number of computers in district classrooms will vary. However, past experience has taught us that without proper training, classroom computers do not get used. As a result, the district decided to establish the training program as a prerequisite to receiving additional computers.

Technology Literacy Training

- Open to all district staff
- Mini-workshops will be provided that emphasize the basic features of applications used frequently in the district. These could include Microsoft Office XP, Kid Pix, Kid Works Deluxe, etc....
- A web-based software training option will also be provided.
- Training provided on an “as needed” basis to individuals via Instructional Technology Support staff.

Leadership Training

Technology leadership training is designed to assist administrators in learning and implementing the Technology Standards for Educational Leaders.

Desired Outcomes:

- Chart a course toward the effective use of technology to improve student learning using a research-based framework.
- Experience hands-on, collaborative learning in a technology-rich environment.
- Attend skills-based study groups and informally facilitated sessions to enhance existing technology leadership skills.
- Research, discuss, analyze, and evaluate issues relevant to being a successful technology leader.

All participants will receive up to \$1750.00 towards the purchase of hardware and/or software that will best meet their needs. (laptop, PDA, projector, etc.)

Instructional Support System

Part-time Instructional technology support will be available at the following buildings: Tahoma Senior High School, Tahoma Junior High School, Historic Junior High School, Cedar River Middle School, Glacier Park Elementary School, Lake Wilderness Elementary School, Rock Creek Elementary School, Shadow Lake Elementary School. These specialists will assist teachers in implementing the skills emphasized in the Tier 2 and 3 staff development programs. Their primary responsibility will be to mentor staff members and to assist them in their ongoing efforts to integrate technology into the classroom curriculum.

Technology Operations Training

Training opportunities will be provided for technology operations technical staff to improve current skills. This could include on-line training, conferences, workshops or seminars.

Timeline and Benchmarks

- | | |
|-------------|--|
| 2004 – 2005 | <ul style="list-style-type: none">• Define the applications to be taught in a mini-workshop format.• Develop mini-workshops.• Design leadership training• Continue to offer Tier 2 curricular integration training.• Design the Tier 3 curricular integration training plan |
| 2005-2006 | <ul style="list-style-type: none">• Schedule and offer mini-workshops.• Implement web-based training option.• Offer leadership training• Continue to offer Tier 2 curricular integration training.• Implement the Tier 3 curricular integration training plan.• Schedule and implement technical staff training |
| 2006 – 2008 | <ul style="list-style-type: none">• Continue to offer Mini-workshops and on-line training options.• Continue to offer Tier 2 and Tier 3 curricular integration training.• Offer leadership training (2006)• Continue technical staff training |

NETWORK AND TELECOMMUNICATIONS PLAN

Technology Assessment

As a district standard, all equipment and services must be compatible with the technical standards of the Washington K-20 Network. We are also committed to compliance with the requirements of the Children's Internet Protection Act (CIPA). Internet traffic is filtered and students are required to abide by district Acceptable Use Policies. The annual state building technology inventory has been completed. Following is a district level assessment summary based on that data. See [Appendix C](#) for an assessment of each site.

Wiring:	Cat 5 copper in all schools, fiber backbone in most schools	Computer Workstations:	1729 Windows XP Workstation computers, 12 Macintosh computers
Network:	1000 bps backbone, 10/100 bps Switched Ethernet	Software:	Microsoft Office XP Pro & Publisher, WSIPC administrative software, Adobe PageMaker, & assorted specialized software
Protocols:	TCP/IP	Telephone:	Nortel PBXs in all but 2 locations
WAN:	Gigabit fiber.	Video:	Distributed video most locations, TVs and VCR access in every classroom.
Services:	Microsoft Windows 2003 file and print services, DHCP, RAS, DNS, Exchange 2000 (OWA),	Electrical Capacity:	Electrical capacity is adequate at this time. Capacity will be address on a per classroom basis as computers are added.
Internet:	3/4 T1 to K20, 1 T1 to INet		

Desired Services and Technologies

The following desired services and technologies support the Technology Standards for Students, Teachers and Educational Leaders.

- This plan will add a significant number of computers. Greater availability will correlate to greater opportunity for students to use computers to accomplish their work. Since the acquisition of equipment is tied to staff training in project-based teaching, teachers will create more opportunities for students to use the equipment to interact and collaborate.
- Currently, classroom teachers do not have a computer designated for their use. This plan will provide all certificated staff in the district with a computer. This will help improve certificated staff productivity and skill with the computer. Laptop computers would be preferable to provide certificated staff the flexibility needed to use the computer anywhere in their classroom, the building, the district and at home.
- Wireless communication will increase staff productivity. It allows staff to use computing equipment to access email, the Internet, network files and applications anywhere in the classroom, the school and the district.
- Video conferencing equipment will open new opportunities for collaboration.
- Improving our Internet presence will provide better information to the public and a better vehicle for publishing student work.
- Many of the desired services are aimed at improving network speed and availability and improving service response times. To accomplish our vision for technology, staff and students must use technology to teach and learn. Equipment must be reliable, available, usable and accessible. When equipment doesn't meet these requirements learning is hindered or the equipment is not used.

Desired Services	Desired Technologies (to provide the new service)	Timelines and Benchmarks
Subject – based software	New / upgraded software	2005 - 2008
4 to 1 student to classroom computer ratio	Computer equipment, switches, cables, surge protectors etc.	Computers will be distributed upon completion of district training programs. (Tier 2 and Tier 3)
Teacher Workstations	Computer equipment, switches, cables, surge protectors etc.	2005 - 2008
Increase student lab access	Mobile laptop labs	Pilot - 2005, implement - 2006
Increased access to peripherals	LCD projectors, digital cameras, etc.	2005 - 2008
Wireless networking	Network cards, access points	Wireless networking will be implemented based on instructional need throughout the life of this plan.
Special Education needs	Adaptive technology products	2005 - 2008
Video conferencing / distance learning /streaming video	Software, cameras, video IP / ISDN gateway	Summer of 2007
Historic Junior High equipment	Server, switches, router, network printers, computers, etc.	Summer of 2004
IP trunking – Integrates phone service and data network. <ul style="list-style-type: none"> • Reduces number of school to school connections, resulting in a lower monthly cost. • Increases number of simultaneous phone calls and voice mail connections. 	IP trunking equipment	Summer of 2004
Connect Glacier Park phone system with district system, provide E911 services	Option 11 PBX	Summer of 2004
Improved Internet presence	Existing	Summer of 2005
Unified Inbox – voice mail, email, fax	Software and / or hardware solution	Summer of 2005
Software / software integration	Biztalk server	Summer of 2005
Improved network management / monitoring capabilities	LAN/WAN and server management software and /or hardware tools	Summer of 2004
Improved centralization, application and update deployment, etc.	Microsoft Server Management System (SMS)	Summer of 2004
Centralized data / app serving and backups, improved data management	SAN, WPNAS, SharePoint server, Remote storage system	Summer of 2004

Level of Connectivity

Our current level of connectivity is sufficient to accomplish the goals that we have set for the life of this plan. WAN connectivity includes gigabit fiber connecting 8 sites. Each LAN has a gigabit backbone and 100mbs to the desktop.

Maintenance and Upgrades

Both district and building level support is provided for equipment maintenance.

- District – District level support is provided by the Technology Department staff. This support currently consists of the Technology Operations Supervisor, two Network Technicians, two Workstation Technicians, one Technology Support Specialist and a Technology Clerk Specialist.
- The desired computer to technician ratio is 500:1. As we add computers, we will add technicians to support them.
- Building – Dedicated building support is provided by Computer Lab Specialists.
- High school students may be used occasionally to supplement department staff for special projects.

A flowchart of the district support process can be found in [Appendix D](#).

Warranties - All computing equipment will be purchased with a minimum of a three year warranty

Computer Refresh

Desktop computers will be replaced on a five year replacement cycle. Laptops and computers used for specialized, high-end applications will be replaced on a 3 year cycle. Network equipment, servers and printers will be replaced as needed.

To accomplish our technology vision, staff and students must use technology to teach and learn.

Equipment will only be used if it is:

- Reliable and available
- Usable – slow computers hinder learning
- Accessible – all district standard software must run on the computer.

Support issues (Total Cost of Ownership or TCO) are also a driving factor for a computer refresh cycle.

Some of these issues are as follows:

- As computers age their TCO increases. They break down more often. Costs include parts (warranty is no longer valid) and labor.
- Increased support time spent on older computers slows response time to all users, decreasing reliability and availability of technology.
- Standardization is essential to keep support response times fast. Older computers make it difficult to standardize.

If we want to keep our software current we should upgrade on a regular basis. To be able to upgrade, all computers must meet the minimum requirements of the new software.

Updated computers are needed at all grade levels. Elementary students use graphic intensive software such as Kid Pix, Oregon Trail, and other multimedia programs. At the secondary level, students use AutoCAD, PhotoShop, DreamWeaver, database training software and other applications that require updated computers. Older computers could be used for specific purposes if the following conditions are met:

- They must be on the network – support costs for stand-alone computers are high since they cannot be accessed remotely and computers are less secure (easier to hack).

- They must be able to run district standard OS. Support for multiple OS's slows response times and increases support costs.
- It must meet a specific need.
- Computers not meeting these conditions will not be supported

Equipment Standards

To provide a reasonable level of support with limited resources we must design a system that includes district-wide standards for computing and network equipment, operating systems and, where applicable, applications. This will reduce support variation, requiring less complex, specialized support that is expensive and time consuming.

FOUR YEAR BUDGET AND FUNDING STRATEGY

This plan will be funded by the following sources of revenue:

- Technology Levy – approximately 5.1 million over 4 years (2005 – 2008). See [Appendix E](#) for an estimate of Technology Levy expenditures.
- General Fund (figures from 2003-04 school year)
 - Purchases - \$150,000
 - Software - \$330,000 (Includes annual fees for student information system, financial system, human resources system and desktop software license leasing).
 - Maintenance - \$60,000
 - Support personnel – Technology Operations Supervisor, 2 Network Technicians, 2 Workstation Technicians, Technology Support Specialist, Clerk

Implementation will increase General Fund expenses over the life of this plan in the following categories:

- Energy usage - \$55,000
- Software licensing - \$40,000
- Operational Technology Support personnel - \$70,000
- Furniture - \$50,000

With the advent of the Federal Telecommunications Act (e-rate), we will apply for a discounted rate of approximately 40% for all our telecommunications costs. These funds will be returned to the General Fund.

EVALUATION AND UPDATES

The Technology Plan is viewed as a “live” document. The District Technology Committee will meet on an ongoing basis to review the plan, its content, and progress toward meeting the various timelines and benchmarks established in the plan. The Instructional Technology Coordinator and Technology Operations Supervisor will be responsible for reporting progress toward the goals and bring recommendations for modifications of the plan to the Technology Committee.

The Teaching & Learning Department will assess the teaching staff to determine their level of confidence using technology in the classroom, progress toward the integration of technology into the curriculum, and perceived level of competency related to the *Technology Standards for Teachers* as outlined in this plan. The following evaluation tools may be used for this purpose:

- Stages of Concern Questionnaire – Adapted from the CBAM (Concerns Based Adoption Model)
- Collecting student artifacts that indicate technology integration
- Degree of Implementation Survey: Teachers – This tool will be used for measuring progress toward technology integration and meeting the *Technology Standards for Teachers*.

The Technology Summit will make recommendations regarding the integration of the *Technology Standards for Students* into the curriculum. Assessment tools for evaluating this will be developed based on these recommendations.

District administrators will receive a Degree of Implementation Survey pertaining to the *Technology Standards for Educational Leaders* as outlined in this plan.

The information obtained from these efforts will be used to determine when and where recommendations for modifications to the plan should be made.

Timeline and Benchmarks

- | | |
|-------------|--|
| 2004 | <ul style="list-style-type: none">• Technology Summit makes recommendations regarding the implementation of the <i>Technology Standards for Students</i>. |
| 2004 – 2005 | <ul style="list-style-type: none">• Develop the following assessment tools:<ul style="list-style-type: none">○ Stages of Concern Questionnaire for teaching staff.○ Degree of Implementation Survey for teachers.○ Degree of Implementation Survey for Administrators based on the <i>Technology Standards for Educational Leaders</i>.○ Develop assessment tools for evaluating student progress toward meeting the <i>Technology Standards for Students</i> based on Technology Summit recommendations. |
| 2005 – 2008 | <ul style="list-style-type: none">• Administer Stages of Concern Questionnaire for teaching staff in January-February of 2005, 2006, 2007.• Administer Degree of Implementation Survey for Teachers in the Spring of 2005, 2006, 2007, 2008• Administer Degree of Implementation Survey for Administrators in late fall 2005, 2006, 2007, 2008• Collecting student artifacts• Technology Committee will meet a minimum of twice per school year beginning with the 2004/05 school year. |

Appendix A

**TAHOMA SCHOOL DISTRICT
OUTCOMES AND INDICATORS**

I. Self-Directed Learners

- A. Set goals
- B. Persistence
- C. Decision-maker
- D. Reflective and evaluative
- E. Inquisitive

II. Collaborative Workers

- A. Sharing
- B. Empathy and respect
- C. Active listener
- D. Flexible
- E. Encouraging

III. Effective Communicators

- A. Clarity of expression
- B. Range of methods:
Multiple Intelligences
- C. Technologically literate
- D. Responsive to diverse audiences
- E. Interprets and evaluates

IV. Community Contributors

- A. Provide service
- B. Harmonious
- C. Future oriented
- D. Improve welfare of others
- E. Enhances the environment

V. Quality Producers

- A. High standards
- B. Reflects originality
- C. Uses a variety of resources
- D. Aesthetically pleasing
- E. Criteria-based

VI. Complex Thinkers

- A. Creative
- B. Problem-solver
- C. Risk-taker
- D. Analytical
- E. Metacognitive

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Appendix B

STANDARDS FOR QUALITY TEACHING AND LEARNING

MEETS STANDARDS	
CLASSROOM ENVIRONMENT	INSTRUCTIONAL & CLASSROOM TEACHING PRACTICE
<p>Creates a classroom environment that is safe, inviting, respectful, and developmentally appropriate:</p> <ul style="list-style-type: none"> • Provides for interactions that are consistently appropriate to student’s culture, gender, and individual differences • Reflects commitment to TSD Outcomes and Indicators • Conveys enthusiasm for learning 	<p><i>Develops a repertoire of instructional and classroom teaching practices including:</i></p> <ul style="list-style-type: none"> • Using a wide variety of active processing strategies to engage students in learning • Stating learning objectives, gives clear directions, and consistently checks for understanding • Mediating student thinking through questioning strategies, thinking skills, and thinking behavior applications • Meeting individual students’ needs through: <ul style="list-style-type: none"> – Flexible grouping (e.g. cooperative learning, small groups, peer partners) – Multiple intelligences – Monitoring and modifying instruction • Incorporating available technology to improve instruction
CLASSROOM MANAGEMENT	ASSESSMENT
<p>Creates classroom structures and communicates clear expectations in a manner that encourages appropriate behavior and promotes student learning:</p> <ul style="list-style-type: none"> • Responds to behavior in a manner that is appropriate, successful, and demonstrates respect for student • Establishes management practices that result in minimal loss of instructional time, such as: <ul style="list-style-type: none"> – Routines for handling materials and supplies – Smooth transitions with clear directions 	<p><i>Creates and utilizes multiple and appropriate assessment tools:</i></p> <ul style="list-style-type: none"> • <i>Aligns tools with lesson objectives to frequently monitor student learning and set future goals, including:</i> <ul style="list-style-type: none"> – Rubrics, scales, checklists – Performance assessments – Objective tests – Portfolios – Student self-reflections and critiques • Communicates clear assessment criteria and standards to students and families • Reads and interprets data to make instructional decisions
LESSON PLANNING & DESIGN	PROFESSIONAL DEVELOPMENT & RESPONSIBILITIES
<p>Consistently implements state and district adopted curriculums:</p> <ul style="list-style-type: none"> • Uses curriculum documents (i.e. continuums, implementation guidelines, preferred visions, unit notebooks, etc.) • Designs lessons with clear objectives focusing on concepts, skills, and strategies (<i>i.e. nested objectives</i>) • Integrates curriculum through key concepts/themes, guiding questions, thinking skills and behaviors, and district outcomes • Applies current research and best practices in delivery of instruction • Incorporates reflection and assessment results in order to improve future lessons. 	<p>(To be revised)</p>

Appendix C

TECHNOLOGY ASSESSMENT

	Central Service Center	Support Services / Maple Valley High School	Tahoma High School
Wiring:	Cat 5	Cat 5	Cat 5
Network Standard:	1000 bps backbone, 10/100 bps Switched Ethernet	1000 bps backbone, 10/100 bps Switched Ethernet	1000 bps backbone, 10/100 bps Switched Ethernet
LAN Protocols:	TCP/IP	TCP/IP	TCP/IP
WAN:	1000 bps Ethernet	1000 bps Ethernet	1000 bps Ethernet
Services:	Microsoft Windows 2003 file and print services, DHCP, RAS	Microsoft Windows 2003 file and print services, DHCP,	Microsoft Windows 2003 file and print services, DHCP, Microsoft Exchange, Microsoft IIS,DNS
Internet:	1000 bps Ethernet	1000 bps Ethernet	3/4 T1 to K20, 1 T1 to INet
Computer Workstations:	42 Windows XP Workstation computers	SS - 9 Windows XP Workstation computers, MVHS - 15 Windows XP Workstation computers	593 Windows XP Workstation computers, 12 Macintosh computers
Software:	Microsoft Office Pro & Publisher, WSIPC administrative software, Adobe PageMaker, & assorted specialized software	Microsoft Office Pro, WSIPC administrative software, & assorted specialized software	Microsoft Office Pro & Publisher, WSIPC administrative software, Adobe PageMaker, Grade Machine, & assorted specialized software
Telephone:	Nortel Option 11	Nortel Option 11	Nortel Option 61
Video:	Distributed video in conference rooms, 6 VCRs, 6 TVs	3 VCRs, 3 TVs	Distributed video, TVs and VCRs in classrooms
Electrical Capacity:	Electrical capacity is adequate at this time. The MDF has 3 separate circuits that are protected by surge suppressing breakers in the panel.	Electrical capacity is adequate at this time. The MDF has a separate circuit that is protected by surge suppressing breakers in the panel.	Electrical capacity is adequate at this time. The MDF and IDFs have separate circuits that are protected by surge suppressing breakers in the panel.

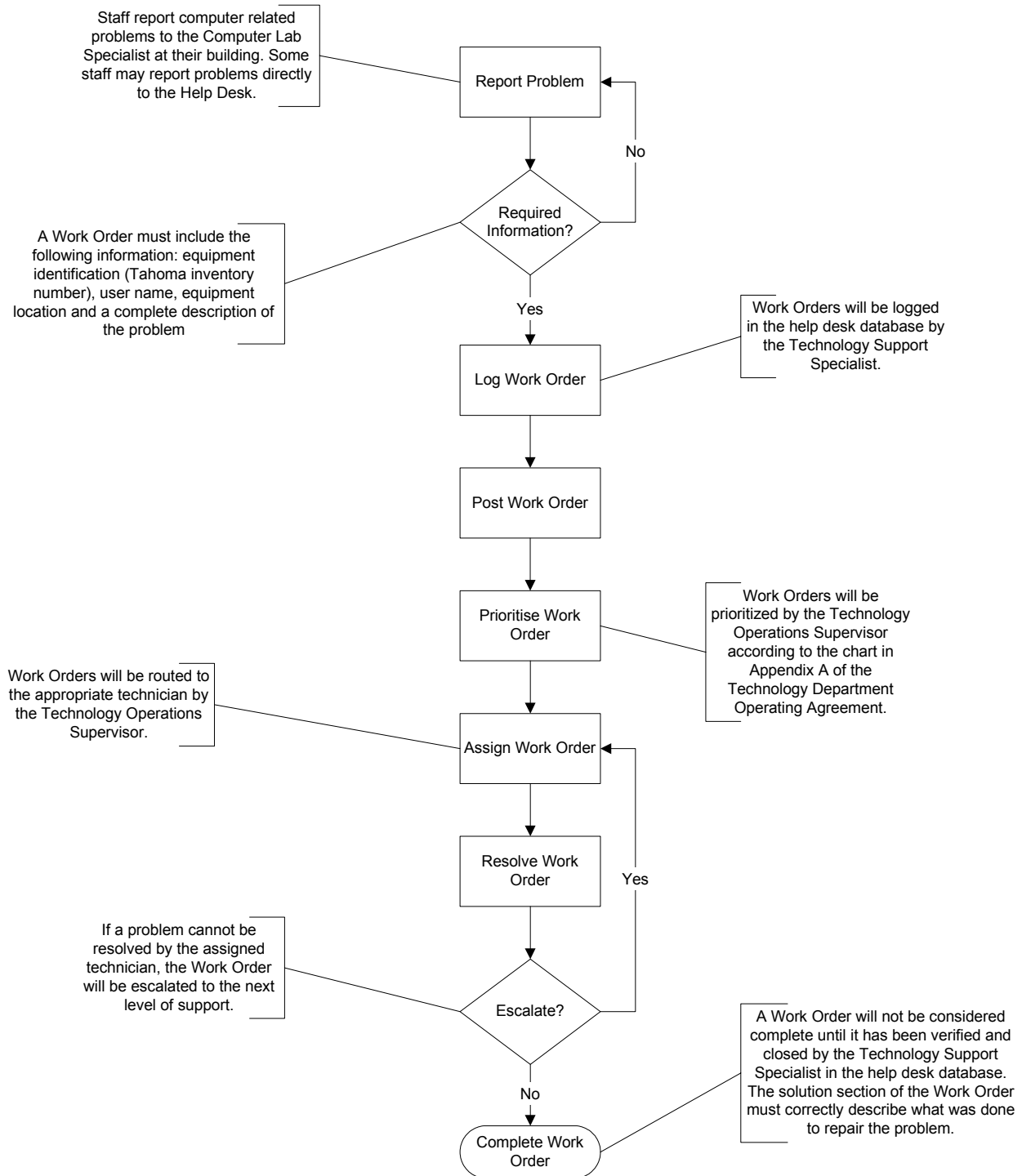
	Tahoma Junior High School	Glacier Park Elementary School	Lake Wilderness Elementary School
Wiring:	Cat 5	Cat 5	Cat 5
Network Standard:	1000 bps backbone, 10/100 bps Switched Ethernet	1000 bps backbone, 10/100 bps Switched Ethernet	1000 bps backbone, 10/100 bps Switched Ethernet
LAN Protocols:	TCP/IP	TCP/IP	TCP/IP
WAN:	1000 bps Ethernet	1000 bps Ethernet	1000 bps Ethernet
Services:	Microsoft Windows 2003 file and print services,	Microsoft Windows 2003 file and print services,	Microsoft Windows 2003 file and print services,

	DHCP	DHCP	DHCP
Internet:	Through THS	Through THS	Through THS
Computer Workstations:	276 Windows XP Workstation computers	187 Windows XP Workstation computers	188 Windows XP Workstation computers
Software:	Microsoft Office Pro & Publisher, WSIPC administrative software, Grade Machine & assorted specialized software	Microsoft Office Pro & Publisher, WSIPC administrative software, Grade Machine & assorted specialized software	Microsoft Office Pro & Publisher, WSIPC administrative software, Grade Machine & assorted specialized software
Telephone:	Nortel Option 11	NorStar key system,	Nortel Option 11
Video:	TVs and VCRs in classrooms	Distributed video, TVs and VCRs in classrooms	Distributed video, 11 VCRs, 11 TVs
Electrical Capacity:	Electrical capacity is adequate at this time. The MDF & IDF each have a separate circuit that will soon be protected by surge suppressing breakers in the panel	Electrical capacity is adequate at this time. The MDF & IDF each have a separate circuit that will soon be protected by surge suppressing breakers in the panel.	Electrical capacity is adequate at this time. The MDF has a separate circuit that is protected by surge suppressing breakers in the panel.

	Rock Creek Elementary School	Cedar River Middle School	Shadow Lake Elementary School
Wiring:	Cat 5	Cat 5	Cat 5
Network Standard:	1000 bps backbone, 10/100 bps Switched Ethernet	1000 bps backbone, 10/100 bps Switched Ethernet	1000 bps backbone, 10/100 bps Switched Ethernet
LAN Protocols:	TCP/IP	TCP/IP	TCP/IP
WAN:	1000 bps Ethernet	1000 bps Ethernet	1000 bps Ethernet
Services:	Microsoft Windows 2003 file and print services	Microsoft Windows 2003 file and print services, DHCP	Microsoft Windows 2003 file and print services, DHCP
Internet:	Through THS	Through THS	Through THS
Computer Workstations:	155 Windows XP Workstation computers	181 Windows XP Workstation computers	123 Windows XP Workstation computers
Software:	Microsoft Office Pro & Publisher, WSIPC administrative software, Grade Machine & assorted specialized software	Microsoft Office Pro & Publisher, WSIPC administrative software, Grade Machine & assorted specialized software	Microsoft Office Pro & Publisher, WSIPC administrative software, Grade Machine & assorted specialized software
Telephone:	Shares CSC system	Nortel Option 11	Nortel Option 11
Video:	Distributed video, TVs and VCRs in classrooms	Distributed video, TVs and VCRs in classrooms	Distributed video , TVs and VCRs in classrooms
Electrical Capacity:	Electrical capacity is adequate at this time. The MDF & IDF each have a separate circuit that will soon be protected by surge suppressing breakers in the panel.	Electrical capacity is adequate at this time. The MDF & IDFs each have a separate circuit that will soon be protected by surge suppressing breakers in the panel	Electrical capacity is adequate at this time. The MDF & IDFs each have a separate circuit that will soon be protected by surge suppressing breakers in the panel

Appendix D

DISTRICT SUPPORT PROCESS



Appendix E

TECHNOLOGY COST ESTIMATE WORKSHEET

	Item	Number	Unit cost	Total	Notes	Page
Professional Development:	Tier 2 training	8	\$ 2,000.00	\$ 16,000.00	Instructor fees for classes	13
	Tier 3 training	1	\$ 45,000.00	\$ 45,000.00	Instructor fees, substitutes for mentoring/observing for approximately 140 teacher participants	13
	Instructional Technology Support Personnel	16	\$ 45,000.00	\$ 720,000.00	.5 FTE/8 schools/year (based on average teacher salary and benefits)	14
	Technology Operations Training	1	\$ 20,000.00	\$ 20,000.00		14
	Technology Literacy Training - mini-workshops	64	\$ 100.00	\$ 6,400.00	Instructor fees for 16 - 2 hour classes a year	13
	Technology Literacy Training - on-line option	4	\$ 5,000.00	\$ 20,000.00	Atomic Learning	13
	Technology Leadership Academy	2	\$ 6,000.00	\$ 12,000.00	Facility, food, ESD facilitation	13
Refresh:	Computer refresh - yr 1*	504	\$ 850.00	\$ 428,400.00	Replaces 266 mhz computers and under	16,17
	Computer refresh - yr 2*	416	\$ 850.00	\$ 353,600.00	Replaces 450 mhz computers and under	16,17
	Computer refresh - yr 3	385	\$ 1,100.00	\$ 423,500.00	Replaces 733mhz computers and under	16,17
	Computer refresh - yr 4	388	\$ 1,100.00	\$ 426,800.00	Replaces 1.13 ghz computers and under	16,17
	Server refresh	6	\$ 10,000.00	\$ 60,000.00		17
	Network printer refresh	34	\$ 1,200.00	\$ 40,800.00		17
Software:	Software	9	\$ 10,000.00	\$ 90,000.00	\$2500/yr/school (8) & Special Ed (\$2500/yr)	15
Purchases:	Tier 2 computers	323	\$ 1,100.00	\$ 355,300.00	75% of (375 teachers - 120 grads prior to 2004) * 2 computers	13,16
	Teir 3 computers	265	\$ 1,100.00	\$ 291,500.00	50% of 212 (375 teachers - 70 teachers with 4:1 - 93 teachers don't need 4:1) * 2.5 computers to get to 4:1 (6.5 avg. computers needed / class - 4 computers in class after Tier 2)	13,16
	Technology Leadership Academy - equipment	30	\$ 1,750.00	\$ 52,500.00	PDA and/or Laptop/person	13

Teacher workstation	370	\$ 1,750.00	\$ 647,500.00	260 classroom teachers + other certs., purchase starting 2005, DellFlex financing (includes cost of buyout)	13,16
Mobile laptop labs	4	\$ 50,000.00	\$ 200,000.00	Elementary schools	16
LAN infrastructure	50	\$ 1,000.00	\$ 50,000.00	Switches to accommodate new computers	16
Misc hardware (surge protectors, etc.)	588	\$ 25.00	\$ 14,700.00	To accommodate new computers	16
Projectors**	200	\$ 1,100.00	\$ 220,000.00		16
Peripherals (scanners, digital cameras, etc.)	54	\$ 800.00	\$ 43,200.00	1 set/6 teachers (325 teachers)	16
Wireless networking - Access Points	52	\$ 750.00	\$ 39,000.00		16
Adaptive Technology	4	\$ 3,000.00	\$ 12,000.00	Special Education	16
Video conferencing / Distance Learning Equipment	1	\$ 30,000.00	\$ 30,000.00	Video IP Gateway and Imux	16
Video conferencing / Distance Learning Cameras	9	\$ 1,200.00	\$ 10,800.00	\$1200/building	16
Historic Junior High - server	1	\$ 9,000.00	\$ 9,000.00		16
Historic Junior High - switches	7	\$ 1,000.00	\$ 7,000.00		16
Historic Junior High - computers	80	\$ 1,100.00	\$ 88,000.00	2 computer labs, library, offices (classroom computers will move with classes)	16
Historic Junior High - network printers	4	\$ 2,500.00	\$ 10,000.00		16
IP trunking equipment	9	\$ 5,000.00	\$ 45,000.00	Integrates voice and Data	16
GP phone system	1	\$ 55,000.00	\$ 55,000.00		16
New / replacement equipment installation	1000	\$ 7.01	\$ 7,010.00	Hours to install equipment	17
Web site development project / Content management system /	1	\$ 30,000.00	\$ 30,000.00		16
Administrative and network management systems	1	\$ 50,000.00	\$ 50,000.00		16

* Priced without monitors

Sub-Total: \$4,930,010.00

Tax: \$ 195,263.00

Total: \$5,125,273.00