

**ANCHORAGE SCHOOL DISTRICT**

**INSTRUCTIONAL TECHNOLOGY PLAN**

**A WORKING DOCUMENT**

**Spring 2002**

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## Executive Summary

The Anchorage School District has embraced the vision of students and staff using technology to develop critical thinking skills, to communicate ideas, to access information, and to solve problems.

The Anchorage School District Instructional Technology Plan includes measurable objectives in student achievement, learning and technology. There are strong connections made between the plan and academic content areas. The instructional strategies provided in this plan use technology integration in alignment with state and local performance standards.

Effective use of technology depends on the knowledge and skills of the teacher. Technology plays an important role in informing teachers, administrators, and parents with the data necessary to drive the decision-making processes pertaining to the new Elementary Secondary Education Act (ESEA) requirements. The Anchorage School District Information Technology Department is currently working on curricular applications to provide teachers with longitudinal assessment data. The recommendation by the committee is to refresh Certificated Staff computers through a computer services contract lease.

The Anchorage School District currently has approximately 15,000 computers in schools. Approximately 8,700 of those computers will not support some current applications including Outlook 2001 and secured applications, such as the Kindergarten Profiler and Reading Databases. The plan calls for replacing certificated staff computers first, with student computers being replaced in the third year of the Plan. The annual cost for certificated staff computers is \$426.00 per computer over three years. The annual cost for student computers is \$220.00 per computer over four years.

All of our schools have introduced computers and other technologies into their classrooms. These technologies play a significant role in instruction and administration for all students and teachers. The Instructional Technology Department will work closely with schools to ascertain the staffing needed in order to support programs, applications and assessment information vital to student achievement. The committee recognizes that technology staffing cannot be determined by numbers of computers, software types, teachers, or students alone. The committee recommends using a formula created by the Massachusetts Institute of Technology. The "Athena" formula breaks out factors that may require support and gives them a weight value depending upon the program/applications used at individual schools.

The goal of the Instructional Technology Plan laid forth by the Anchorage School District is to support students' attempts to meet the performance standards in the content areas of reading, writing and mathematics. Appendix B. Student and staff use of technology can and will take many different forms as determined by the content addressed and the tool(s) that are best suited to meet the objective. Educational reform efforts will be met by way of utilization of emerging instructional strategies, collegial support and best practice information from a wide variety of resources.

## **Vision**

The Anchorage School District community of students and staff will use technology to develop critical thinking skills, to communicate ideas, to access information, and to solve problems. Technology will be integrated throughout the K-12 curriculum. By using technology as a tool, teachers, administrators, and support staff will become more efficient and effective in facilitating and managing the learning environment and fostering lifelong learning.

## **2001-2002 Anchorage School District Mission and Goals**

### **Mission:**

*The mission of the Anchorage School District is to educate students for success in life.*

### **Goals:**

- Increase *academic excellence* by emphasizing student achievement, developing respect for diversity, maintaining quality staff retention, recruitment and training, and maximizing opportunities for lifelong learning.
- Establish a *supportive learning environment* by providing safe and caring schools that are barrier-free, by promoting health and wellness, and by collaborating with other community agencies where appropriate.
- Ensure *public accountability* by continuing participation in the State required testing program, through the continued use of the writing assessment in selected grades, through wise use of financial resources, through construction and maintenance of facilities, and through effective communication to internal and external audiences.

### **We, the Anchorage School Board, Superintendent and District staff commit that:**

1. Students will demonstrate academic excellence as indicated by performance on State and District measures of academic performance. All students will make progress toward meeting Anchorage and State Benchmarks for Reading, Writing, and Math. Performance will be assessed on:
  - a. Alaska Benchmark Exams (Grades 3, 6, and 8)
  - b. Terra Nova Basic Skills Exams (Grades 4, 5, 7, and 9)
  - c. Anchorage Writing Assessment (Grades 5, 7, and 9)
  - d. Alaska High School Graduation Qualifying Exam

These various assessments will provide information on the status of student group performance at grade levels 3-10.

2. A higher percentage of students will acquire basic skills and strategies to read independently by the end of the third grade as indicated by:
  - Meeting the Alaska standard for performance on the grade three Alaska Benchmark Reading Exam
  - Teacher assessment. Teacher pre and post assessment using a variety of measures as well as teacher observation and judgment will be used.
3. A higher percentage of students will demonstrate a high level of math skills at the end of each grade level in grades three through ten. Performance will be assessed based on:
  - The percentage of students meeting state standards in mathematics as indicated on Alaska Benchmark Examinations, Terra Nova, and the Alaska High School Graduation Qualifying Exam will increase.
  - The percentage of students who have been successful in completing Algebra 1 in grade 8, Geometry in grade 9, and Algebra 2 in grade 10 will increase. Grades earned in each class will also be reported.
  - Student grades and credits earned by students in Algebra classes for each middle and high school will be reported by student grade level.

The District will continue to develop and implement training in math content and teaching strategies for elementary and middle school teachers.

The District will work with students, parents, teachers, counselors, administrators, and community representatives to increase expectations for elementary, middle and high school math.

4. All students will demonstrate a high level of spelling skills or growth in spelling at the end of each grade level in grades 2 through 10.
  - The number of students achieving proficiency in the conventions of writing (spelling, punctuation, capitalization usage) will increase as measured by the Alaska Student Assessment system in grades 3 – 10 and the Anchorage School District Writing Assessment in grades 5, 7, and 9.
5. There will be a decrease in the dropout rate of middle school and high school students as compared to the 2000-2001 school year.

**We, the Anchorage School Board, Superintendent and District staff will focus on:**

- Strengthening the effective delivery of instructional services to students using all financial resources available.
- Attempting to minimize the impact of budget constraints on student achievement.
- Increasing parental and community awareness of the critical role families and the community play in the academic success of students.
- Continuing to create positive community relations and understanding of issues critical to the Anchorage School District by establishing coalitions with parents, business leaders and political leaders at all levels.

## **Instructional Technology Goals**

### **Goal 1: Infrastructure**

Provide the necessary support to build upon existing technology infrastructure, while expanding implementation of new and future technologies to effectively meet the needs of all students.

- Objective 1.1: Work with individual schools to provide technical support.
- Objective 1.2: Ensure existing schools and new construction adhere to guidelines and Education Specifications.
- Objective 1.3: Secure funding sources to support growth and expansion.
- Objective 1.4: Create process to maintain and upgrade as well as replace obsolete equipment.

### **Goal 2: Staff Development**

Provide teachers with consistent ongoing professional development opportunities to prepare them to use technology effectively to improve teaching and learning.

- Objective 2.1: Improve quantity and quality of professional development courses to assist teachers in increasing student achievement, based on ASD Performance Standards.
- Objective 2.2: Provide professional development opportunities that focus on instructional strategies designed to improve student achievement.
- Objective 2.3: Use a variety of professional development approaches to improve instructional support for teachers, focusing on using technology effectively to help students learn.
- Objective 2.4: Improve the preparation of new-to-district teachers in using technology effectively to support student academic achievement.
- Objective 2.5: Provide teachers with timely assessment information to guide instruction.

### **Goal 3: Student Technology Use**

Provide students with the technology and information skills needed to extend learning and academic achievement.

- Objective 3.1: Students will use technology appropriately and responsibly as indicated by the ASD Acceptable Use Policy and filtering system.
- Objective 3.2: Students will demonstrate proficiency in the use of technology skills to locate, evaluate, and collect information, while communicating information and ideas effectively.
- Objective 3.3: Students will make informed decisions in using technology resources, while developing strategies for solving real-world problems.

#### **Goal 4: Best Practices**

Continue research and evaluation of best practices in effective use of technology integration to extend teaching and learning.

- Objective 4.1: Continue research and evaluation on new technologies and how they apply to teaching and learning.
- Objective 4.2: Identify and replicate “best practices” in technology integration, and assist schools with implementation.
- Objective 4.3: Identify and evaluate teacher resources available on the Internet and software applications that infuse technology with Core Curriculum Content Standards.

#### **Goal 5: Technology Integration**

Increase student achievement through technology integration using digital media/content.

- Objective 5.1: By 2005, all performance standards will be aligned with technology frameworks, supporting the core curriculum content, leading to increased student performance.
- Objective 5.2: By 2004, all schools will develop approaches to infuse technology into their instructional areas identified in their individual school technology plans.
- Objective 5.3: By 2005, all certificated staff and administration will have technological skills, utilizing the network and digital content to support instruction in the core content curriculum.

#### **Timeline/Action Plan Goals/Objectives**

The Instructional Technology Plan will be implemented over a three-year period, June 30, 2002-June 30, 2005. The timeline/action plan is divided into activities and strategies that support the goals and objectives of the plan. The committee will review the action plans bi-annually to ensure the expectations of the timeline continue to address the goals and objectives set by this plan. Appendix A.

#### **Connections to State and Local Standards: ASD Student and Teacher Technology Standards**

The Anchorage School District’s mission is to educate students for success in life. Technology plays an essential role in this preparation, helping students learn necessary skills for today’s constantly changing society. The planned use of technology and its positive impact on students is therefore important to the Anchorage community. The District is committed to teach students to become proficient and frequent users of the technology necessary for the acquisition of knowledge, their future world of work, and communication.

The technology committee representing elementary, middle and high school teachers has developed a matrix that aligns Alaska State Performance Standards, with the ASD Technology Student Frameworks. Suggested software/resources and Internet sites are also part of this matrix. This matrix will be revisited and revised to stay current with changes in software and Internet resources. Appendix B.

A team of educators from the Anchorage School District developed technology standards for students and teachers i.e. Student Framework, Appendix C and Teacher Competencies, Appendix D, both of which were approved by the School Board on January 25, 1999. The frameworks are based on the National Educational Technology Standards, NETS, for Students, Appendix E and the Alaska State Technology Standards for Students, Appendix F. The competencies are based on the National Educational Technology Standards for Teachers, Appendix G.

The Anchorage School District technology standards parallel those on the state and national level and are interwoven with all ASD content standards and performance indicators.

### **School Board Adoption**

On **(Insert Date)** the Anchorage School District School Board approved Memorandum #1**(Insert Number)**, approving the Instructional Technology Plan **(Insert new plan date)**. Appendix H.

### **Integration of Technology into the Curriculum**

In their 2001 report, Key Building Blocks for Student Achievement in the 21<sup>st</sup> Century, the CEO Forum ([www.ceoforum.org](http://www.ceoforum.org)) outlined crucial skills... “In the rapidly changing economy... there is a corresponding shift in the skills and abilities that students will need to thrive in the future. These 21<sup>st</sup> century skills include digital literacy, inventive thinking, effective communication, teamwork, and the ability to create high-quality products.”

Technology’s role in the classroom is to support learning. With the exception of Career Technology classes in secondary schools, technology should not be considered a curriculum. The tools of technology will be used in all content areas if its use enhances learning. In order to meet the state technology standards, students will demonstrate mastery of the performance indicators outlined in the NETS for students and the ASD technology frameworks.

Technology integration includes digital content and networked applications to provide instruction that will result in higher levels of student achievement. This plan addresses the need for technology literacy for all students, with specific goals for using advanced technology to improve student academic achievement. Continued staff development opportunities are identified to promote curricula and teaching strategies that integrate technology effectively in curricula and instruction, based on relevant research.

## **RESEARCH EVIDENCE**

Researchers found that the most successful technology projects were those where teachers were least dependent on resources beyond their reach. In a study of 118 recipients of technology innovation grants [Zhao, et al. \(2001\)](#) found that the conditions for successful implementation of innovations with technology suggest that teachers need:

- to know whether the technology application they wish to use requires additional equipment, Internet and network connections, and software in order to work effectively;
- to know how to use and have access to the additional resources as well as to the application they have selected;
- awareness of and access to timely technical guidance;
- to use technology applications that are consistent with their own teaching practice and pedagogy, the social dynamics of the school, the school culture (collaborative or individualistic), and the curricular goals of the school and district;
- colleagues who will support and mentor them through the implementation of their innovative efforts.

Technology is most effectively integrated into instruction when educators and education decision makers review and analyze the content of technology applications to determine if the introduced skills and knowledge align with curriculum content standards.

“Alignment of project or lesson content with state content standards is an important first step to infusing technology with curricula. A survey of 465 teachers in California resulted in 92% affirming that the first step in infusing technology into the curriculum is having information about the specific content of a program or use of an application that aligns with state-adopted curriculum standards. A number of the respondents indicated that an online resource that profiles electronic learning resources with the specific skills in knowledge areas that align with content standards would help them select programs that will facilitate curriculum integration with technology ([Cradler and Beuthel, 2001](#)).” The ASD Performance Standards Matrix, Appendix B showcases the alignment of technology frameworks and performance standards and will assist teachers with technology integration aligned with the curriculum content standards they are teaching.

## **Needs Assessment**

Ongoing assessment is a critical component of this Instructional Technology plan. The areas to be assessed include student technology competencies, teacher technology competencies, curricular connections to national, state and district standards, equipment surveys, network status, and electrical capacity.

- *Student Technology Skills:* Teachers will informally assess student technology skills as they relate to the student competency framework. This assessment will guide lesson development incorporating technology skills.
- *Staff Technology Skills:* The Instructional Technology department will conduct formal and informal surveys to determine teacher needs in attaining the identified competencies. These assessments will be used to determine staff development activities based on the needs of the individual school staff. Each school will conduct its own needs assessment.
- *Electrical and Network:* Electrical and network connectivity will be continually assessed as buildings undergo construction or changes to the network. This assessment will be conducted and tracked through Information Technology and Facilities and Maintenance. The assessment will reference the Education Specifications.
- *Hardware Inventory and Use:* An annual survey will be conducted at each school to determine the level and type of computers and related equipment. This survey will be compiled and used as a guide for planning purposes in order for each school to move toward or reach the technology hardware standards.

### **Staff Skills**

Skills for using specific technology tools and for integrating technology into teaching and lessons are assessed primarily at the site level. Various tools are used for these assessments. Individual school needs are then conveyed to District personnel and used to guide District-wide staff development opportunities and activities.

Resources, such as the Better Educational Technology Assessment Toolkit (BETA), are provided for staff individual technology skill assessment. Profiler (<http://profiler.scrtec.org/>) and other assessment tools are used by schools to determine skill level and training needs. In addition to these assessments, schools have participated in the state-wide TAGLIT (Taking A Good Look at Instructional Technology) survey. TAGLIT, a national initiative measures the teacher and student technology skills, the building technology plan and the building infrastructure.

### **Hardware Inventory and Capabilities**

The Anchorage School District currently has approximately 15,000 computers in schools. Approximately 8,700 of those computers will not support some current applications including Outlook 2001 and secured applications, such as the Kindergarten Profiler and Reading Databases. The plan calls for replacing certificated staff computers first, with

student computers being replaced in the third year of the Plan. (Reference section Technology to be Acquired.)

Each school maintains an inventory of all computers and related hardware. An updated copy of the inventory will be submitted to the Chief Information Officer at the end of each year. In addition to the school inventory, asset management will be included in the computer services contract. Under the existing computer services contract, MicroWare will conduct an annual inventory of all equipment included under the contract, and submit a report to the Chief Information Officer. A complete asset inventory containing all computers in the district is maintained at the district level by Purchasing. A summary of equipment is included in Appendix I.

Hardware capabilities include network connection, access to servers, Internet and Email. The District periodically broadcasts information on channel 43. Schools have access to televisions with local TV channels, either installed in the classroom or available for checkout.

## **Staff Development**

### **RESEARCH EVIDENCE**

Teachers are motivated to develop their own technology skills when professional development links technology applications to specific curriculum goals. A literature review by Roschelle, et al. (2000) (Type 2, Level B) reports that "numerous literature surveys link student technology achievement to teachers' opportunities to develop their own computer skills" (p.90). A system of support and reinforcement that embeds the use of technology "in a broader education reform movement" (p.76) is critical to a school's capacity to change. Roschelle, et al also identify the ways technology contributes to relations among teachers:

- By networking with mentors and other teachers electronically, teachers can overcome the isolation of the classroom, share insights and resources, support one another's efforts, and engage in collaborative projects with similarly motivated teachers (p.91).

The Anchorage School District recognizes the need to provide ongoing and sustained training and professional development for staff. The plan for technology training is based on models identified by the Department of Education and Early Development as Best Practices for Staff Development. Each of the models takes into consideration the following elements:

- Needs that are individual as well as school-based;
- Goals that are ongoing and long range;
- Plans based on research and principles of adult learning that are developed cooperatively by stakeholders.

Schools have differing needs for staff development. Therefore, it is important for each school to design its staff development activities based on the needs of the students, staff and learning community. Each school will have an allocation of funding based on the size of its staff.

Each school has a site-based technology plan that is periodically reviewed and revised. Plans have a strong professional development component that addresses how individual schools will effectively use technology to help students meet appropriate local, state and national standards. The district will provide a minimum allocation of \$50 per staff member to fund the technology training needs identified in those plans. There will be a \$1000 minimum allocation per school.

District-wide training for district applications will be planned for the 2002/2003 in-service time period. The Instructional Technology Department will utilize a half-day in-service at the beginning of the school year to provide hands-on training for all certificated staff members.

New Teacher Training Fair: a half-day has been secured for the 2002/2003 school year. This training will provide background information for all new-to-district staff in reference to Information Technology and Instructional Technology policies and procedures.

### **Resources for Staff Development**

Training opportunities include but are not limited to the following:

- *Credit Classes:* The District will continue to facilitate credit courses on a self-support basis throughout the year. Each summer the Anchorage School District, in collaboration with the Alaska Staff Development Network, sponsors a weeklong Technology Academy with numerous credit classes. Additional technology courses that emphasize technology integration will be offered during the summer break. In addition, online courses are available for teachers.
- *Web-Based Support and Self-Directed Learning Materials (WWW, video, CD-ROM-based etc.):* A series of multimedia resources in a variety of formats will be developed and made available.
- *Summer Training Institute:* Each summer a technology leadership institute for staff will be sponsored and delivered by the District. The focus of the Institute is on leadership and program development.
- *School Technology Assistance Team (STAT):* A team of technology teachers will work directly in schools with classroom teachers to help them achieve their individual and school technology goals. STAT training is provided, upon request, to teams of teachers who have developed technology-rich projects with students.
- *Individual Teacher Assistance:* District Technology Teachers provide training and support to individual teachers who request assistance.

- *Large Group Training:* Inservices and workshops are held as new topics or technologies warrant.
- *Conferences:* ASD staff members are encouraged to participate in technology related conferences at local, state and national levels. When appropriate, district personnel present at and may contribute in other ways to such conferences.
- *Alaska Department of Education – Marco Polo Training:* A cadre of teacher trainers will receive training in June 2002. The Anchorage School District Instructional Technology Department will host four training sessions for approximately 80 District teachers. These teachers will become trainers for future classes/workshops.
- *Northwest Regional Educational Technology Consortium:* - The Northwest Regional Educational Laboratory has developed many resources to assist with teacher and student assessment of technology skills. These tools will be used to guide staff development needs.
- *Building Technology Coordinators:* Each high school has a full time technology coordinator and each middle school has a half time coordinator. The primary focus of these positions is to facilitate the integration of technology into all curricular areas and provide support to teachers.
- *District-wide Elementary Technology Teachers:* Currently there are six Elementary Instructional Technology Teachers serving sixty schools. These teachers facilitate the integration of technology into curriculum and provide support through modeling and mentoring for teachers. In addition, each elementary school provides a level 1 addendum for a technology contact person.
- *Meetings for Elementary Computer Contact and Middle/High School Coordinators:* Half-day meetings will be scheduled to inform staff of new developments, resources and procedures regarding technology that may have an impact at their schools. Two release days per elementary school per year will be required. Release time will be provided for secondary coordinators who have teaching responsibilities during the scheduled meeting time.
- *ASSIST:* The comprehensive high schools participate in the ASSIST (Advanced Students Supporting, Instructing, and Servicing Technology) Program. Selected students receive special training and provide instruction as well as technical support within their schools.

### **Electrical Power and Network Telecommunication Cabling Infrastructure Within the Schools**

The Anchorage School District is committed to assuring that each school facility has the electrical and telecommunication capacity to fully implement the Instructional Technology Plan. The Facilities Department has developed an implementation plan to upgrade the

electrical and telecommunication infrastructure at existing school facilities. The plan is designed to upgrade existing facilities to meet the 5 to 1 student to computer ratio plus the staff. Implementation of the multi-phased plan is nearly complete. New and renovated facilities are designed with the latest technology considered. Appendix J, Part 1 lists the status of the infrastructure at each school site.

Appendix J, Part 2 contains an example of the electrical calculations used to determine if the electrical capacity at each facility is adequate to meet the needs of the anticipated increased load from computers.

### **Telecommunications Software**

The standard telecommunication software package used by the District includes current versions WRQ Reflections for Windows and White Pine 320/340 for the Macintosh. Web browsers include both Netscape and Explorer. In addition Exchange mail is the standard mail application for both the Windows and Macintosh platforms.

### **Network Infrastructure**

Networks allow students and teachers to communicate within the classroom or building, across the district and around the world, and they provide a means for centralized data storage. Networks encourage exploration and learning by bringing a challenging, information-rich environment to the teacher and learner. Networks also foster collaboration and communication through the use of email, web applications, and interactive video conferencing.

#### **A. Network Structure**

The Anchorage School District Network is comprised of two major elements: the network within each school and the network across the District that serves to connect the schools to each other and to the Internet.

#### **B. Network Standards**

Network standards are essential to ensure cost effective support and maintenance. The requirements of the Instructional Technology Plan will be integrated with the Education Specifications. The following standards provide for growth in network capability and changes in technology while maintaining current service:

##### **1. Network Standards for Schools:**

- a. Minimum of Category V wiring (EIA/TIA568 compliant) or greater throughout the building and new cabling will adhere to the latest district requirements;

- b. Optical fiber backbones and voice backbones between telecommunication rooms where cost effective;
- c. RJ45 terminations throughout the building including patch panels;
- d. Classroom network connections will reference Education Specifications. In addition data grade ports should be provided for voice and printer(s).
- e. Ethernet will be the standard for all District LAN networks.
- f. Wireless connection will adhere to the IEEE 802.11 B standard.

2. Wide Area Network Standards:

- a. Connection from each school to the District backbone will be a minimum of 768Kbps;
- b. Throughput of the District backbone will be a minimum of 20Mbps;
- c. District protocol standard will be TCP/IP and AppleTalk;
- d. Ethernet will be the standard for all District WAN networks.

C. Current Status - ASD Networks

The networking facilities across the District have evolved over a period of years in accordance with budget allocations and program need. The following paragraphs summarize current District networks.

1. High Schools

All six comprehensive high schools and the Martin Luther King Career Center are connected to the ASD WAN. All of the senior high schools have one or more computer labs connected to the District network. In addition, each high school library has at least fifteen fully networked computers for student research.

2. Middle Schools

All nine middle schools are connected to the ASD WAN. In addition, each middle school library has at least ten fully networked computers for student research.

3. Elementary Schools

All elementary schools are connected to the ASD WAN. In addition, each elementary school library has at least five fully networked computers for student research.

#### 4. Other Schools and Programs

AVAIL, Benny Benson, McLaughlin, SAVE, Steller and Whaley have at least one classroom network outlet in each classroom.

- Relocatable Classrooms

If a relocatable is utilized as a classroom, the recommendation is that it meets network standards for schools as addressed in this plan.

#### D. Future Network Expansion

As the demands on the network infrastructure increase, the network will need to expand to meet these needs. The District plan is to reduce the number of sites per backbone segment by installing additional segments. This will increase the bandwidth and performance of the network. Site segments will be increased by replacing existing circuits with higher speed connections or by adding more circuits.

#### E. Internet

The School District is currently connected to the Internet using fractional T-3 circuits at 9Mbps.

### **Policies and Filtering**

#### A. Policies

The District has several policies that pertain to computer usage, copyright and Internet access. Signed Internet User Agreement forms are required of all students, staff and community members who access the Internet via the District network. The Internet Policy Committee meets on a monthly basis to review and revise, as needed, the Internet Usage Guidelines. Copyright inservicing is conducted periodically. These documents may be found in Appendix K.

#### B. Filtering

During the 1999-2000 school year the District acquired a three-year license for the Internet filtering system, X-Stop, which blocks access to pornographic and obscene/tasteless Internet sites. The filter, X-Stop, resides on the District network and filters at the District level. In accordance with the Child Internet Protection Act (CIPA), the issue of filtering or blocking inappropriate web sites is addressed through a centralized filter residing in the ASD Information Technology Center. The ASD Internet Guidelines, Appendix K, address staff responsibilities in supervising and monitoring online activities.

This Instructional Technology Plan, including the CIPA requirements was presented and approved by School Board on April 29, 2002. In addition, schools and individual teachers may have their own rules or guidelines as to what students may access when using the Internet during class time or at other times during the school day. The Chief Information Officer of the Anchorage School District, working with The Internet Policy Committee, establishes guidelines for Internet use in ASD.

### **Technology To Be Acquired**

#### **A. Proposed Computer Services Contract - Certificated Staff Computers – Priority I**

This plan addresses the need to refresh certificated staff computers through a computer service contract lease. The recommendation is to provide teachers with laptop computers, with a three-year refresh cycle. By the 2005-2006 school year, all certificated staff members will be on a three-year refresh cycle. The Plan recommends the addition of 1,000 computers in the second year and an additional 3,000 computers over the following two years, for a total of 4,000 computers. The annual hardware cost is estimated to be \$426.00/computer over a three-year period. Appendix M.

#### **B. Proposed Computer Services Contract - Student Computers – Priority II**

As technologies evolve, the existing hardware and software in our schools will not be able to keep up with effective tools for learning. With the proposed computer service contract, technology will be refreshed on a four-year cycle, thus assuring new technology each year as the old technology is replaced. Years 1 and 2 continue the current computer service contract with 2,500 computers in service. Year 3 of the plan calls for an additional 2,500 student computers. It will take five years to reach the desired student to computer ratio of 5:1, for an estimated total of 10,000 computers. The annual hardware cost is estimated to be \$220.00/computer over the four-year period. Appendix M.

### **Supporting Resources Required**

The recommendations made by the committee take into consideration that educational technology planning and budgeting must look at a variety of factors beyond the initial investment in technology to ensure positive returns in education. The plan addresses the need to define District technology support in relation to its educational goals. The Instructional Technology Department will work with individual schools to address staffing and support. The committee reviewed several staffing guideline recommendations including cost per workstation, ratios and formulas. This plan addresses staffing needs based on a combination of staffing needed to support current programs and applications (Appendix L), using the “Athena Project Formula”. This will be used as a starting point to better define all levels of ASD support, including repair, network, technical, and instructional positions.

- **Athena Project Formula:** Staff members = (Number of workstations and peripherals/500) + (Number of Users/1000) + (Number of major LANs, servers, databases, etc./5) + (Average number of software applications that must be installed and maintained on each computer multiplied by number of computers in full-time use/5000) + Number of staff required to handle web site content, telephone, video, satellite, broadcast, and other non-computer technologies) + (Number of management, administrative and administrative support staff) – (Number of positions outsourced or handled by volunteers). This formula developed by the Massachusetts Institute of Technology was designed to assist school districts in determining the number of staff they would need to provide appropriate technical support, based on the individual conditions of their district/school.

### **Athena Project Formula Examples**

- **Elementary – Russian Jack – 2.4 Support Staff Needed**
  - Number of Workstations/Peripherals = 350
  - Number of Users = 475
  - Number of major LANS, Servers, Databases = 4
  - Average number of software = 25 X Computers in Full-time Use = 84
  - Number of Staff required for misc. telephone, video - 0
  - Number of Outsourced Staff - 0
- **Middle School – Romig Middle School – 2 Support Staff Needed**
  - Number of Workstations/Peripherals = 175
  - Number of Users = 160
  - Number of major LANS, Servers, Databases = 4
  - Average number of software = 25 X Computers in Full time Use = 150
  - Number of Staff required for misc. telephone, video - 0
  - Number of Outsourced Staff - 0
- **High School – Service High School – 5.6 Support Staff Needed**
  - Number of Workstations/Peripherals = 600
  - Number of Users = 2560
  - Number of major LANS, Servers, Databases = 5
  - Average number of software = 25 X Computers in Full time Use = 160
  - Number of Staff required for misc. telephone, video - 0
  - Number of Outsourced Staff - 0

### **A. Year 1: Technology Coordinators/Contact Teachers**

#### **Current Status:**

- High Schools- Each senior high school has a full time technology coordinator whose main responsibility is to support the integration of technology in the curriculum. The current demand for hardware and network support, however, consumes the majority of the coordinator's time.

- Middle Schools - Each middle school has a half time technology coordinator whose main responsibility is to support the integration of technology. The reality is that there is a full time person in most of the middle schools. The other .5 FTE comes from the school staffing. The need for hardware and network support at the mid-level is just as demanding in the middle schools.
- Elementary Schools - Currently six elementary technology teachers support technology integration in sixty schools. The demand for technical support is also very high at the elementary level. In addition, each elementary school receives a level 1 addendum of \$750.00 for a technology contact teacher

**B. Year 1 Addition:**

- The addition of 1 FTE Secondary Teacher Expert to Instructional Technology Staff has been approved for the Year 1 budget. This position works in conjunction with the 6 elementary technology teachers and coordinates the efforts of the technology coordinators at the secondary level.

**C. Year 2 and 3 Staffing:**

- The Instructional Technology and Information Technology Departments will work with individual schools, using the Project Athena formula as a starting point to develop an adequate number of support positions in ASD K-12 schools.

**Funding**

See Appendix M for a detailed breakout of cost.

**Identification and Coordination of Funding Sources**

Funding for hardware, personnel and professional development to support the Instructional Technology Plan comes from a variety of sources including the operational budget, local bonds and federal /state grants. The Elementary Secondary Education Act (ESEA) will provide Title IId, Enhancing Education Through Technology funds via a non-competitive grant to support this plan.

**Anchorage School District Hardware and Software Standards and Interoperability Capabilities**

Interoperability and configuration standards are a high priority in decision-making regarding current and future technology. District-wide technology standards are established and technology resources made available in each building for instructional use. In addition, we have a district-wide recommended technology list available for schools to guide purchasing

decisions and to ensure interoperability and configuration standards for future acquisitions are compatible with current capabilities. Appendix N. It is also necessary to coordinate efforts with facilities and maintenance and to adhere to the school board approved Education Specifications for elementary, middle, and high school.

Current productivity software recommendations will be established and periodically reviewed by the Anchorage School District Instructional Technology Department. These recommendations will be based on educational needs and available resources.  
Appendix O.

Selection of curriculum specific software is ultimately the responsibility of the individual school. To assist in the selection process, Instructional Technology, Curriculum and Evaluation, Elementary, Middle and Secondary Divisions, provide the following resources:

- Collaborative needs assessment;
- Anchorage School District online resources;
- Software reviews.

### **Equity**

The Anchorage School District recognizes the importance of equity for all students. Equity in education assures that all students have the same access and opportunities for learning regardless of race, gender, culture, religion, learning style, economic status, physical or mental ability or disability, etc. Technology is a great equalizer by providing students access to information, expertise, and other resources vital to the learning process. Direct access to these resources eliminates the artificial barriers that may be present in a non-technological environment.

### **Alliances and Partnerships**

The Anchorage School District has an extensive School Business Partnership Program. ATU, GCI, AT&T and Apple Computer Inc., are just a few of the partnerships that include technology. These partnerships provide a variety of services to schools and the communities they serve.

Anchorage School Business Partnerships is an affiliate of the National Association of Partners in Education and was established in 1991. Since then, it has grown to over 450 partnerships. Both the Anchorage School District and the Anchorage Chamber of Commerce support the organization.

The Anchorage School District works closely with the University of Alaska Anchorage to provide adult education to the learning community. The District and UAA currently share a computer lab that is used to provide pre-service and in-service training to UAA students and ASD staff. In addition, the Anchorage School District will work with other adult literacy

providers such as Community Schools in providing the resources and training to adult communities.

## **Evaluation**

### **A. Evaluation: Progress Toward Plan Goals**

Progress toward goals, including the integration of technology into the curriculum will be monitored. The process for evaluating the effects of technology on student achievement of Alaska content and performance standards will be assessed at each school. An Advisory committee has been created to ensure progress toward Plan goals. The Instructional Technology Planning committee receives guidance and direction from the Advisory committee with a formal review of the Plan twice each year (fall/spring). Members of the Advisory Committee. Appendix P.

### **B. Evaluation: Effects of Technology on Student Achievement**

The process for evaluating the affect of technology on student achievement of Alaska content standards and performance standards will include assessments created by a cadre of trainers, using the District's Learning Through Performance Tasks. In addition, continuous assessment of the Plan's goals and objectives will be monitored. Appendix A.

## **Review and Revision**

The Technology Plan for the Anchorage School District is a working document, always subject to review by staff and community members. The Advisory Committee along with the Instructional Technology Department and the Information Technology Department will review of the following:

- Integration of technology into the curriculum to meet standards;
- Instructional support and training;
- Technical support;
- Network status;
- Hardware and software standards;
- Technology Plan implementation.

It is the intent that the review process will occur on a regular basis. Periodic updating ensures that as technologies change, students will continue to have the necessary tools and experiences to prepare them for success in life. An annual report will be made to the School Board.

## **Committee Members**

Appendix Q provides a list of the committee members who developed the original Instructional Technology Plan for the Anchorage School District. Appendix Q also includes a list of the committee members for the current revision.