

## **SHAPING 4J'S FUTURE**

### **TECHNOLOGY**

#### **FOCUS GROUP REPORT: DECEMBER 2006**

#### **INTRODUCTION**

As a part of District 4J's strategic planning process, "Shaping the Future," eight focus groups composed primarily of district staff met the week of November 13 to begin to address several unanswered questions that will have an impact on future decisions about school size, grade configurations, programs, and location of schools.

The Technology focus group identified a number of implementation options that could be considered by the district and the implications associated with those options. We also reviewed demographic and enrollment information and instructional literature, and identified the key values and beliefs upon which we based our implementation options. Finally we identified a number of issues and questions that we thought should be considered by the school board, a think tank that will be operated by the university, and the community.

Londa Rochholz facilitated our group and Denisa Taylor was our listener/writer. The listener writer was responsible for recording what we said and for drafting this report.

The members of our committee were:

Les Moore, Director of Computing and Information Services  
Pat Lyon, Secondary Teacher, Monroe Middle School  
Cheri Criteser, Accounting and Business Systems Specialist, Financial Services  
Eric Lane, Speech and Language Pathologist, Education Support Services  
Scott Roshak, Technology Support Specialist, Roosevelt Middle School  
Reid Shepard, Classroom Teacher, César E. Chávez Elementary  
Kim Ketterer, Instructional Technology Specialist, Instruction Department  
Joe Alsup, Elementary Principal, Crest Drive Elementary

We must make a disclaimer: our focus group was asked to focus on a specific topic area, knowing that all of the topics discussed during this process are interrelated and what the district does in one area has implications for the others. The focus group process allowed us to share our discussions with the other focus groups, but each group is submitting an individual report.

A broad based think tank will synthesize the work of our focus group and the other focus groups as it develops a set of integrated alternatives or possibilities for consideration by the school board later in the spring.

## **TECHNOLOGY FOCUS GROUP SUMMARY OF REPORT**

We were asked to work with three funding assumptions based on a hypothetical budget. The Technology Focus Group felt compelled to offer a fourth funding assumption based on the needs of the Eugene School District 4J.

### **FUNDING ASSUMPTION 1: No additional funds will be available for Technology**

- Four 8-hour classified Technology Support Specialists assigned 1 to each region (designate 32 hours to TSS before general education classified hours are allocated to schools)
- Centralized hardware/software purchasing to enhance purchasing negotiations (purchasing occurring 3 times a year)
- Dedicate 1 district staff development day to Technology

### **FUNDING ASSUMPTION 2: Some additional funds will be available for Technology**

- Recommendations from Funding Assumption 1
- Four certified Instructional Technology Coaches assigned 1 to each region (job description attached)
- Subscribe to online professional development using online tutorials
- Continue developing an articulated Technology Scope and Sequence Kindergarten - Grade 12

### **FUNDING ASSUMPTION 3: More additional funds will be available for Technology**

- Recommendations from Funding Assumptions 1 and 2
- Four more 8-hour classified Technology Support Specialists designating a total of two TSS to each region
- One professional staff to implement on line tutorials for professional development
- One Webmaster to maintain district website
- Professional development for Technology Support Specialists
- Transportation and equipment for Technology Support Specialists

### **FUNDING ASSUMPTION 4: Technology Initiative – Equal Access for All!**

- Technical Support
  - Technical Support Specialist - District program staffing (35 Classified FTE)
- Professional Development
  - District Sponsored Days (3 days per year)
  - Discretionary Building/Department Release time (3 half-days per teacher per year)
  - Certified Technology Coach (40 Certified FTE - 1 per School/Department)
- Software
  - One Time Purchase Software (eg. Office Suite)
  - Subscription Software (eg. NetTrekker)
- School Based Instructional Hardware
  - Computers
    - 3:1 students
    - 1:1 teachers

- Printers - 1 per classroom
  - SMART Boards - 1 per classroom
  - Access Points - 1 per classroom
  - Document Cameras - 1 per classroom
  - Projectors - 1 per classroom
- Technical Infrastructure
    - Webmaster
    - Student Information System (eg. eSIS)
    - Data Warehouse
    - Services
    - Replacement Fund (eg. Business System Software)

## **4J'S CURRENT PROGRAM MODEL**

Les Moore, Director of CIS, provided the members of the focus group with a description of the district's current program model.

### **The Data Network**

The data network (4jNet) consists of two main components: In-building networks called local area networks (LANs) and the connection between the buildings called the wide area network (WAN). We are in transition between two different WAN networks at the present time. The older WAN is leased from Qwest consisting of T1 (1.5 megabits per second) copper lines from Qwest offices to the sites and higher speed fiber from Qwest offices to the Ed Center. There are eighteen T1 sites remaining in this part of our WAN. The newer WAN is leased fiber from EWEB that forms a ring with six schools and the Ed Center along with additional fiber (some leased from EWEB and some owned by 4J) that connects fourteen other sites to the fiber ring. All of these twenty sites have at least 1 gigabit per second data capacity. Because current bond funding is insufficient to provide fiber to the remaining T1 sites, we are investigating several alternatives to increase bandwidth to the remaining eighteen sites. A future bond measure may provide funds to deploy fiber to most of these eighteen sites.

The local area networks (LANs) within buildings are also in a state of transition. In most buildings the LAN consists of one or more wiring closets with category 5 copper cabling going to more or more data outlets in each room in the building. A building and multiple switches connect the LAN together. We are currently in the process of replacing older slow hubs with higher speed switches in all buildings. All schools also have one or two types of wireless LAN in the building. The most common wireless implementation is a mobile cart of computers with an attached wireless access point that moves with the cart. This mobile wireless access point is connected to a data outlet in the room where it is being used. The other type of wireless implementation is fixed (non-mobile) wireless access points covering a specific area of the building. In six buildings there are fixed wireless access points throughout the building resulting in wireless access being available anywhere in the building. These buildings are Chavez, Holt, Howard, Cal Young, Kelly and Madison. All of our four high schools also have a portion of the building covered by fixed wireless access points. Both types of wireless implementations require a user to authenticate (log in) before being receiving access to the network.

### **4JNet Connection to the Internet**

4jNet is connected from the Ed Center to the Internet through an Internet Service Provider in Portland. Our connection to the Internet currently has a bandwidth of 50 megabits per second. 4jNet is also connected to the Oregon Exchange for exchanging data with other entities also connected there. For example Bend-LaPine and Coos Bay school districts connect to 4jNet at the Oregon Exchange to have access to student information systems shared with 4J. 4jNet is also connected via separate fiber to Clackamas ESD where business systems are being hosted.

### **Methods of Connecting to 4jNet**

There are three different methods that can be used to connect to 4jNet: 1) a wired connection within a 4J building, 2) a wireless connection within a 4J building using either of the two wireless methods and 3) over the Internet. When connected with the Internet access to 4jNet resources will be limited unless a Virtual Private Network (VPN) connection is employed.

### **Directory Server Connections**

The district is moving toward a centralized server that will contain information about each 4j staff member and each student. This centralized server is called a directory server. One of the important functions of this server is to hold the username and password that can be used to allow access to different

functions. The advantage is that a person only needs to remember one username and password and only needs to change a password in one place. Current services that are connected to the directory server are e-mail, calendar, VPN, wireless, web server, OS servers, the data warehouse and a few others. Additional services will be added in the future.

### **Data on the Network**

Many school districts maintain two separate networks - one for academics and a separate one for operations. 4J has just one data network that is used for both purposes. 4JNet carries student academic data, non-academic student data, student information systems, assessment data, financial data, HR data, e-mail, file sharing, videoconferencing, building security, HVAC control, phone data, web browsing, library information, nutrition information, data storage, backup information, network monitoring information and data exchange between servers.

### **Recent and Current Projects**

The data network and the information that is carried on it is an ever-growing resource for the district. Some of the projects to continue enhancing the capabilities of the data network and other projects that use the data network are listed here as an example of this expanding functionality:

- Mobile carts setup and distribution for Oregon State Assessments
- New Library System
- Move of Bend-LaPine/Redmond to 4J for eSIS
- Data Warehouse
- Phone System Changes (all voicemail at EC)
- NEHS Small Schools
- Technology infusion at Howard/Kelly
- Filer rfp, purchase and installation
- New email anti-spam and anti-virus system
- Complete Transition to new eSIS Configuration
- Complete Transition to new Storage System
- Complete Storage Backup and Recovery
- Continued Development of Data Warehouse
- Increased Bandwidth to Remaining Sites
- Increased Training of Calendar System and School Connects (auto dialer) System
- Update of email/calendar/directory System
- CIM/CAM/PASS System Development
- Deploy the Parent Assistant module in eSIS
- New 4J website development

### **Planned Project in the District Technology Plan**

The District Technology Plan is a three-year plan dealing with both the academic and operational use of technology within the district. The current plan is for years 2005-06, 2006-07 and 2007-08. The following projects are listed for the final two years of this plan:

- Move GL and Finance to Lawson system
- Move to new Work Order system
- Create a new Intranet website
- Move to new Materials Booking system
- Implement Parent Assistant in eSIS
- Continued enhancement and training of the 4J Data Warehouse
- Implement a Rapid Notification system
- Implement a Disaster Recovery Strategy

- Increase data network capacity to remaining sites

**Projects for a future capital bond**

Many projects dealing with technology require a large capital expenditure and may be considered for funding in a future capital bond. Some of these possible projects follow:

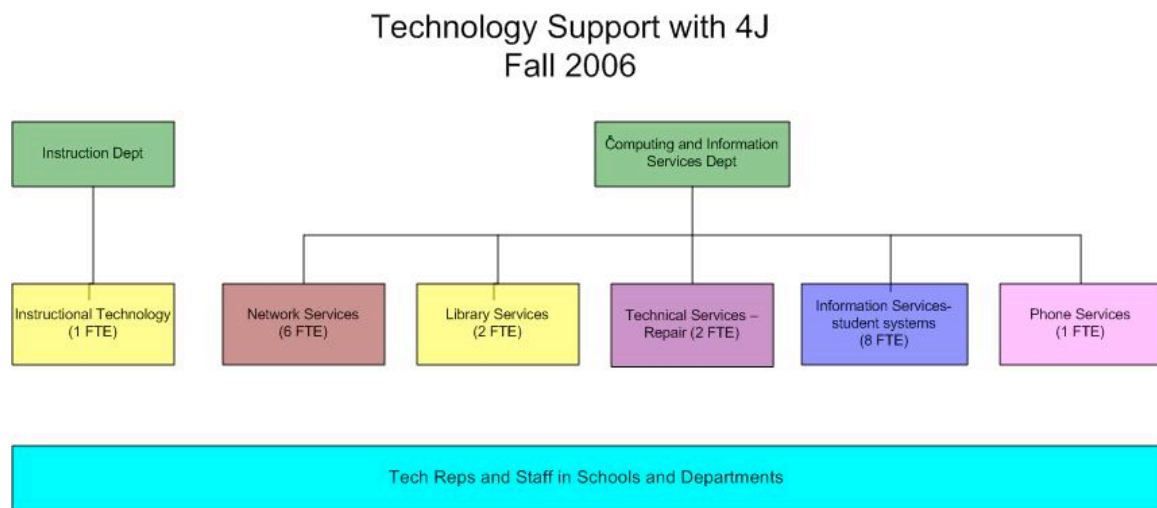
- Wireless Access Throughout
- Projectors Throughout
- High Speed Connections to Remaining Sites
- Phone System Replacement
- Network Equipment Refresh

**A Few Statistics**

- Investment in LAN and WAN (\$3m from 1994 bond and \$4.7m from 2002 bond)
- Routers - 34
- Switches - 225
- Optical Fiber ring to 7 nodes – 43 miles
- Wireless Access Points - 394
- Printers - 535
- Computers – 6,000
- Email Messages (Nov. 6 – 118,103 total messages; 37,804 spam; 45 viruses; 80,254 good)

**Current Technology Support Structure**

The following diagram shows the basic functional units of dealing with the support of technology. Computing and Information Services provides much of this function on both the operational and academic sides while the Instruction Department provides academic support. Additionally schools hire Technology Support Specialists to assist staff within the buildings. The amount of in-building support varies widely from building to building.



## **4J CURRENT PROGRAM MODEL**

Kim Ketterer, Instructional Technology Specialist, provided the members of the focus group with another description of the district's current program model.

### **The Big Picture**

In the K-12 Eugene School District 4J schools, desktops and laptops in both Mac (OS X) and Windows (XP) environments are supported. Most common models include: iBook, MacBook, and Dell Laptops, and iMac and Dell Desktops. Many of the 40 buildings have a combination labs and classroom pods of desktop configurations. All buildings have at least two laptop mobile labs, more commonly referred to as COWs (Computers on Wheel) and over half of the buildings have purchased more COWs for students use.

### **Connectivity**

Every classroom in 4J is connected to the Internet. The connectivity to the buildings varies between fiber and T1 lines. Six schools are totally wireless buildings: three elementary—Bertha Holt, César E. Chávez, and Howard; and three middle—Colin Kelly, Cal Young, and Madison.

### **Kinds of Technology**

Technology in the schools includes a wide range of equipment: Computers, LCD Projector, Digital Still Cameras, Digital Camcorders, Proscopes, Writers, MP3 Players, Document Cameras, Handheld Computers, and Interactive White Boards.

### **Technology Acquisition**

Because the Eugene School District 4J is a site based school district, individual schools set their educational technology goals and emphasis to meet their stakeholder needs. Likewise, purchasing decisions are made (and funded) at the school level. This includes equipment, software, and associated professional development. Funding sources for equipment:

- Parent raised money
- Grants
- TESA COWs—District

### **Technical Support in the Schools**

The Eugene School District 4J School provides three FTE district-wide desktop support positions to service the technical needs for all 40 program out in the school buildings: Mac 2.0 FTE for Mac support and 1.0 FTE for PC support.

Currently there is no program staffed FTE in any of the 4J school buildings for setup, troubleshooting, and repair of technology. Each School Site makes decisions on how to allocate their certified FTE and classified hours-per-day to accomplish this task. Generally the high schools have allocated 1.0 classified FTE to keep the equipment running; in the K-8 schools there is a wide variety and very unequal and “sketchy” allocation of technical support. Some examples:

#### **Certified FTE:**

- .01 -.2 certified classroom teacher time (one period a week/day-technology only)
- .5 certified technology teacher (teachings students)
- .8 certified educational technology coach (working with teachers)

#### **Classified Hours:**

- 8-hrs/day classroom instructional aid (technology repair and teaching)
- 2-5-hrs/day technology support specialist (technology repair only)

Additionally, each building has a Technology Representative identified to attend three district-wide meetings as well as be the building contact person between the CIS and Instructional Technology Departments for correspondence, updates, and information.

### **Software Available**

There are various types of licenses available to the 4J schools: district-wide purchased, limited district-wide purchased, Lane ESD purchased, purchasing consortium.

#### District 4J Licenses

- Tiger (Mac OS 10.4)
- NetTrekker
- World Book
- Britannica
- AntiVirus (PC only)
- Eudora

#### Limited District Licenses

- iWork (TESA and TILT COWs only)
- Comic Life (School Aggregate Purchase)
- Inspiration (Aggregate Count)

#### Lane ESD Licenses

- Blackboard
- United Streaming

#### District Software Purchasing Bid Award

- OETC

### **K-12 Technology Integration**

The Eugene School District supports, encourages, and models technology integration across all curriculum areas at all grade levels. One FTE position at the district level coordinates this effort. The district has adopted the National Educational Technology Standards (NETS) to follow as a guideline for technology integration. Formal keyboarding instruction is targeted at 3<sup>rd</sup> grade and reinforced throughout the elementary and middle school grades. Beginning in the north Eugene region, a K-12 scope and sequence plan for instructional technology is being designed that is in alignment with the NETS as well as the newly released ODE State Educational Technology Plan. The pilot plan will be shared across district regions once it is finalized.

### **Technology Grants**

Over the last three-four years Eugene School District has been awarded local, state, and federal. The current and ongoing grant funded projects include:

- Project WRITE (Madison and Kelly Middle Schools)
- The Resource Room Handheld Project (Kelly and Kennedy Middle Schools, Churchill High School)
- The Northwest Handheld Computer Project (K-8)
- ODE Ed Tech TILT Project (Coburg, Meadowlark, Corridor, Spring Creek, Edison, Yujin Gakuen, Harris, and Kelly)
- ELL Online Notetaking Project (NEHS)
- Reading Buddies (K-1 Howard Elementary)
- Technology Infusion (Howard Elementary)
- EEF Grants (SMART Boards, Projectors, and Professional Development)



### **Internet Use and Policies**

The District created an Internet Guidelines document that outlines appropriate online use of the Internet for staff and students. It contains specific policies around various controversial topics including: virus filtering, a proxy server for student computers, and maintaining a spam filter for 4J email accounts. The document also addresses copyright, intellectual property, and multimedia fair use policies for the teaching and learning environment.

### **Support and Resources**

At the District level many technical and instructional opportunities are provided and supported for all staff members including email accounts and “Hands on” Training/Workshops using the Ed Center Classroom Desktop Lab (10) and the Instruction Department Mobile Lab (30). A variety of district sponsored technology workshops are offer at the Education Center as well as on-site workshops customized for individual staffs. Lane ESD also offers technology workshops for 4J staff members. Additionally, the Technology Integrated into Learning and Teaching (TILT) Website (TILT) is maintained in the Instruction department to support the classroom environment.

### **Emerging Technologies in 4J**

As a direct correlation to instructional technology professional development that has been taking place in the school district, optimal teaching stations are emerging in classrooms. These stations include: laptop computer, LCD projector, a document camera, and a SMART Board. Additionally, other emerging technologies are finding their place in 4J classrooms environments:

- Flash Drives
- iPods
- ProScopes
- Digital Cameras
- Digital Camcorders
- Video Conferencing
- Instant Messaging

### **Technology Issues**

Along with increasing the technology in the classroom, the district also must deal with increasing technology issues academically, economically, and politically. The most pressing one is the mandated Technology Enhanced Student Assessment (TESA). Since acquisition of equipment for each building is site based the issue is making sure there is enough current technology to get the testing completed. To this end, the district provided each school with mobile labs but in only a minimal amount of laptops. Getting enough equipment for statewide testing for students remains an issue. The following lists other topics that 4J is focusing on:

- Digital Divide
  - Professional Development
  - Accessibility
    - On-site Technical Technology Support (Program Staffed)
    - Internet Access for ALL students
    - Internet Safety—cyberbullying

## **IMPLICATIONS OF THE CURRENT MODEL**

Following our review of the district's current program, we considered the implications it had for the following issues:

### **Equity**

- Families living in poverty do not have access to technology
- Schools in the middle SES group do not have as much technology in their schools due to lack of funding. The schools with higher SES have the ability to fundraise. Schools with lower SES have Title 1 funds from the government and Equity funds from the district.
- Schools have different levels of technology support.
- In the current system of site based decision-making, schools are allowed to make choices in professional development, equipment acquisition and technical support
- Students have varied experiences with technology
- There is a progressive decrease in the availability of technology from elementary, middle schools to high school
- Title funding is available to elementary schools but not middle schools and high schools
- Principals support technology differently

### **Open Enrollment, Neighborhood Schools, and Alternative Schools**

- Some families can choose schools based on technology on site
- Schools with Technology Infusion can pull students from other neighborhood schools

### **Program Staffing**

- Technology Specialist staffing comes from the school's general education FTE
- Schools have to make choices between specialists (PE, music, technology)
- The district has developed a job description, but schools are not using it when defining technology positions
- There are no district hiring guidelines
- 4J is not competitive in the open market in attracting Technology Specialists
- Tech representatives are often staff members who have other responsibilities
- Schools are increasing the number of computers but are not increasing the amount of tech support - if you double the number of computers schools must double the tech support
- Grants written for technology should include funds for professional development, staffing for desktop support and network infrastructure support
- We do not have required program staffing for technology

### **State and Federal Mandates**

- More and more online assessments are required of our students
- TESA is an unfunded mandate
- Schools must provide the technology (hardware) to administer state assessments
- Computer labs and COWS are tied up with assessments and not available for instruction
- No provisions are made to hire a testing coordinator - responsibilities are added onto a staff member's assignment
- 8<sup>th</sup> grade Technology Proficiency will be assessed starting in 2007-2008
- Emphasis on state assessment leaves no time for teaching students using best practices
- Vanguard has a program available to provide students and teachers feedback on assessments – the program costs money and requires upgraded computers
- At this time, special education paperwork is not networked – specialists need to have the capability to share information collaboratively
- 504s are recorded on eSIS - the document has limitations

- In order to get federal dollars, the district needs a proxy filter on all student machines - this takes person power

### **Student Transportation**

- Schools that have Technology Infused Programs will attract students. Families must provide for their own transportation. Students in poverty may not have access to transportation.

### **Elementary Schools**

- Varied access to technology
- Varied staffing and inconsistent support
- Not equitable amongst elementary schools
- Varied professional development offered in elementary schools
- No standards around technology knowledge
- One-third of the elementary schools have fiber optic systems and two-thirds have T1
- Three elementary schools have fixed wireless throughout the building
- Some elementary schools have Academy money and Title 1 money that can be used for instructional technology professional development and hardware purchases
- Not all teachers in elementary schools have teacher laptops
- Not all classrooms have projectors
- Some schools have more computers than others
- Some schools have SMART Boards
- Different administrators give different amounts of support around technology
- No systemic expectations for administrators around technology

### **Middle Schools**

- New middle schools have a projector and a laptop for every teacher
- Three out of eight middle schools are wireless
- Inequitable technical support amongst schools
- ***Fewer laptops per student than in elementary schools***
- ***Significant disparity from elementary schools to middle schools***
- Few course options for middle school students. Each middle school has different instructional programs
- Some students come to middle school with keyboarding skills, some do not
- New middle schools have been built for future technology needs
- Different administrators give different amounts of support around technology
- No systemic expectations for administrators around technology
- Middle school staff access less instructional technology professional development than elementary school staff

### **High Schools**

- Very few accessible computers for the number of students
- ***Fewer laptops per student than in middle schools***
- ***Significant disparity from middle schools to high schools***
- Some high school teachers do not have their own computers
- TESA (Technology Enhanced Student Assessment) laptops were some of the first laptops in the high schools
- Instructional model is lecture based and not integrated using technology
- High schools are very autonomous
- Students are coming into high school with varied level of readiness
- Very little staffing and money dedicated to technology

- Every high school has at least 1.0 FTE dedicated to technical support
- High school staff access less instructional technology professional development than elementary school staff
- Different administrators give different amounts of support around technology
- No systemic expectations for administrators around technology

## **Regional Impact**

- **School Regions**
  - North region is working together, meeting frequently and developing an articulated scope and sequence for technology.
  - Churchill region started the process of articulating a scope and sequence
  - No central directive from district personnel to articulate K-12 plan
  - North region has daVinci Middle School focused on technology
  - North Eugene School of IDEAS has all new computers
  - Imbalance amongst elementary, middle and high schools. More technology in the elementary schools.
  - Computer programming is not taught in our schools.
- **The State of Oregon**
  - Kids graduating in Oregon do not have a competitive advantage
  - Oregon is very limited on the ability to pass bonds to fund schools and technology (Shoreline School District in Washington just passed a bond measure that allows for laptop computers for every student grades 5 through grades 12)

## **Other (Including impact on other focus group topics)**

- **Special Populations (Special Education, 504 Plans, ELL, TAG)**
  - To get a student what they need instructionally requires jumping through hurdles. To get assistive technology for individual students it often requires an IEP or a 504 Plan
  - At this time, Special Education paperwork is not networked. Specialists need to share information collaboratively
  - 504s are recorded on eSIS. The document has limitations
  - Assistive technology is available, but our district is not accessing because of cost and lack of centralized resources for evaluation
- **Technology Purchasing**
  - Software license purchasing through site-based decision-making is creating inequity, is more costly and may potentially violate public purchasing law.
  - There is not a budget line item in the district budget for district wide software license purchases. Each site license must be individually approved
  - Schools individually budget technology creating inequities
  - We do not evaluate the total cost when choosing/purchasing software

## **INSTRUCTIONAL LITERATURE**

Prior to the meetings of our focus group, the district asked Jo Ann Mazzarella, Grant Specialist, to review the literature dealing with Technology. She summarized recent research and writings in this area. Attachment B is a copy of that full report. Attachment F is the 4J District Technology Plan of Action and Attachments G and H include portions of the Oregon Educational Technology Plan (2006-2010).

## PROPOSED IMPLEMENTATION OPTIONS: TECHNOLOGY

We were asked to identify a number of implementation options for technology based on a range of funding assumptions. We were given three different funding scenarios; including no additional funds, a small percentage increase for technology funding, and a slightly larger percentage increase for technology funding.

**The Quality Education Model (QEM) minimally addressed technology. It gave technology a cursory look, said it needed to be looked into more in depth, but did not fully investigate the costs or implication of technology. A June 2002 Best Practices Panel reported to the Quality Education Commission “the panel reviewed successful technology programs and learned what it takes to bring technology into the classroom. The importance of this instructional tool was apparent, but it was not clear what the model should include as part of the baseline for funding. It is clear, however, that this area is important as an integrated part of the instructional process and an area that contains an overwhelming potential cost. It was the belief of the Panel that this area should be a consideration for future panel review.” The QEM did not recommend any increases to what is considered baseline technology. Our committee felt this omission alarming. Therefore, we moved ahead with a fourth funding assumption based on our own assessment of needs.**

When CIS and Business Systems expenditures are excluded, Eugene School District 4J does not meet the QEM recommended funding level, which is inadequate.

The committee also took into consideration the Oregon Department of Education Technology Plan 2006-2010. This plan is an implementation guide for the Oregon schools in conjunction with the Oregon Department of Education’s Common Curriculum Goals. Please reference Attachments G and H for the curriculum goals and a summary matrix of the plan. The entire plan is available to review at <http://www.ode.state.or.us/teachlearn/edtechplan.doc/>

Furthermore, there is an impending federal requirement for evaluating student technology proficiency.

Our proposed implementation options are described below, along with what we believe the implications to be. We have also summarized the values and beliefs that we, as a focus group, operated by.

### TECHNOLOGY FOCUS GROUP’S VALUES AND BELIEFS

#### Our Values

- We believe that technology is key to the instructional needs for all students.
- We believe that technology is key to the operational needs of the school district.

#### Our Beliefs

1. ALL students and staff must have equal access to technology.
1. Comprehensive and ongoing professional development opportunities are provided for all staff.
1. Technology infrastructure must have sufficient capacity and reliability to support the teaching and learning and operations of the district.
1. Technical support must meet the needs of all users.

IMPLEMENTATION OPTIONS	IMPLICATIONS
<p><b>Funding Assumption 1: No additional funds will be available to the District.</b></p> <p><b>Implementation Option: (Describe)</b></p> <ul style="list-style-type: none"> <li>○ Four full-time classified Technology Support Specialists (TSS) assigned 1 to each region (designate 32 hours to TSS before general education classified hours are allocated to schools)</li> <li>○ Centralized hardware/software purchasing to enhance purchasing negotiations (purchasing occurring 3 times a year)</li> <li>○ Dedicate 1 district staff development day to Technology</li> </ul>	<p><b>Equity</b></p> <ul style="list-style-type: none"> <li>○ Each school will have baseline access to hardware and software support</li> <li>○ All staff participate in professional development</li> </ul> <p><b>Open Enrollment, Neighborhood Schools, and Alternative Schools</b></p> <ul style="list-style-type: none"> <li>○ Minimal indirect implications</li> </ul> <p><b>Program Staffing</b></p> <ul style="list-style-type: none"> <li>○ Significant improvement for program staffing – adds 4 Technology Support Specialists</li> <li>○ Minimally reduces general education FTE to each school</li> </ul> <p><b>State and Federal Mandates</b></p> <ul style="list-style-type: none"> <li>○ Minimal indirect implications to Oregon Educational Technology Plan (See attached document)</li> </ul> <p><b>Student Transportation</b></p> <ul style="list-style-type: none"> <li>○ No implications</li> </ul> <p><b>Elementary Schools</b></p> <ul style="list-style-type: none"> <li>○ Each school will have baseline access to hardware and software support</li> </ul> <p><b>Middle Schools</b></p> <ul style="list-style-type: none"> <li>○ Each school will have baseline access to hardware and software support</li> </ul> <p><b>High Schools</b></p> <ul style="list-style-type: none"> <li>○ Each school will have baseline access to hardware and software support</li> </ul> <p><b>Regional Impact</b></p> <ul style="list-style-type: none"> <li>○ Summertime technology support for hardware</li> <li>○ Establishes single regional contact that understands the technical needs of the schools in each region</li> </ul> <p><b>Other (Including impact on other focus group topics)</b></p> <ul style="list-style-type: none"> <li>○ Provides support to ESS and ELL staff</li> <li>○ Staff development day will need to be negotiated with other programs</li> </ul>
<p><b>Funding Assumption 2: Some additional funds will be available to the District - \$400,000</b></p> <p><b>Implementation Option: (Describe)</b></p> <ul style="list-style-type: none"> <li>○ Recommendations from Funding Assumption 1</li> <li>○ Four certified Instructional Technology Coaches assigned 1 to</li> </ul>	<p><b>All implications identified in Funding Assumption 1 apply</b></p> <p><b>Equity</b></p> <ul style="list-style-type: none"> <li>○ All staff will have access to Technology Coaches, instructional support and on line professional development</li> <li>○ Facilitates and enhances differentiated instruction</li> </ul>

<p>each region (\$340,000) (job description attached)</p> <ul style="list-style-type: none"> <li>○ Subscribe to online professional development using online tutorials (\$70,000)</li> <li>○ Continue developing an articulated Technology Scope and Sequence Kindergarten – Grade 12</li> </ul>	<p><b>Open Enrollment, Neighborhood Schools, and Alternative Schools</b></p> <ul style="list-style-type: none"> <li>○ May begin to have an equalizing effect between all schools</li> </ul> <p><b>Program Staffing</b></p> <ul style="list-style-type: none"> <li>○ Significant improvement for program staffing – adds 4 Technology Support Specialists and 4 certified Technology Coaches</li> </ul> <p><b>State and Federal Mandates</b></p> <ul style="list-style-type: none"> <li>○ Begins to address the goals of the Oregon Educational Technology Plan (See attached document)</li> <li>○ Begins alignment with USDE Strategic Plan</li> </ul> <p><b>Student Transportation</b></p> <ul style="list-style-type: none"> <li>○ No implications</li> </ul> <p><b>Elementary Schools</b></p> <ul style="list-style-type: none"> <li>○ The instructional staff will have increased support for technology integration across all curricular areas</li> </ul> <p><b>Middle Schools</b></p> <ul style="list-style-type: none"> <li>○ The instructional staff will have increased support for technology integration across all curricular areas</li> </ul> <p><b>High Schools</b></p> <ul style="list-style-type: none"> <li>○ The instructional staff will have increased support for technology integration across all curricular areas</li> </ul> <p><b>Regional Impact</b></p> <ul style="list-style-type: none"> <li>○ Establishes single regional contact that understands the instructional needs of the schools in each region</li> <li>○ Promotes K-12 instructional technology articulation</li> </ul> <p><b>Other</b></p> <ul style="list-style-type: none"> <li>○ Enhances professional development</li> </ul>
<p><b>Funding Assumption 3: The Quality Education Model is fully funded by the Oregon State Legislature. - \$800,000</b></p> <p><b>Implementation Option: (Describe)</b></p> <ul style="list-style-type: none"> <li>○ Recommendations from Funding Assumptions 1 and 2</li> <li>○ Four more 8-hour classified Technology Support Specialists designating a total of two TSS to each region (\$180,000)</li> <li>○ One professional staff to implement on line tutorials for professional development (\$80,000)</li> </ul>	<p><b>All implications identified in Funding Assumption 1 and Funding Assumption 2 apply</b></p> <p><b>Equity</b></p> <ul style="list-style-type: none"> <li>○ Each school will have access to hardware and software support</li> <li>○ Equal access to training and professional development opportunities</li> <li>○ Improved communication and access to information and resources for staff, students and community</li> </ul> <p><b>Open Enrollment, Neighborhood Schools, and Alternative Schools</b></p> <ul style="list-style-type: none"> <li>○ Increased equalizing effect between all schools</li> </ul>



<ul style="list-style-type: none"> <li>○ One Webmaster to maintain district website (\$80,000)</li> <li>○ Professional development for Technology Support Specialists (\$20,000)</li> <li>○ Transportation and equipment for Technology Support Specialists (\$30,000)</li> </ul>	<p><b>Program Staffing</b></p> <ul style="list-style-type: none"> <li>○ Significant improvement for program staffing – adds 4 additional Technology Support Specialists, 1 Webmaster and 1 professional staff to implement online tutorials</li> </ul> <p><b>State and Federal Mandates</b></p> <ul style="list-style-type: none"> <li>○ Further addresses the goals of the Oregon Educational Technology Plan</li> <li>○ Continues alignment with USDE Strategic Plan</li> </ul> <p><b>Student Transportation</b></p> <ul style="list-style-type: none"> <li>○ No implications</li> </ul> <p><b>Elementary Schools</b></p> <ul style="list-style-type: none"> <li>○ Greater access to training and professional development opportunities</li> <li>○ Improved communications with school communities</li> <li>○ Centrally hosted websites</li> </ul> <p><b>Middle Schools</b></p> <ul style="list-style-type: none"> <li>○ Greater access to training and professional development opportunities</li> <li>○ Improved communications with school communities</li> <li>○ Centrally hosted websites</li> </ul> <p><b>High Schools</b></p> <ul style="list-style-type: none"> <li>○ Greater access to training and professional development opportunities</li> <li>○ Improved communications with school communities</li> <li>○ Centrally hosted websites</li> </ul> <p><b>Regional Impact</b></p> <ul style="list-style-type: none"> <li>○ Improved regional contacts that understand the technical needs of the schools in each region</li> <li>○ Improved intra-district communications</li> </ul> <p><b>Other</b></p> <ul style="list-style-type: none"> <li>○ Provides increased training and professional development opportunities for itinerant staff</li> </ul>
<p><b>Funding Assumption 4: Technology Initiative - \$17,000,000</b></p> <p><b>Eugene School District 4J currently spends around \$5,000,000 per year for technology excluding bond funds.</b></p> <p><b>See attachment for flowchart and additional documentation.</b></p>	

## **QUESTIONS AND ISSUES TO BE CONSIDERED BY THE SCHOOL BOARD AND UNIVERSITY OPERATED THINK TANK**

We have the following questions that we believe the school board and the university operated think tank should consider as it synthesizes our work with the work of the other focus groups.

- If we want to address the issue of equity and equal access to all students and staff, we need to change the way we make decisions about technology staffing and purchasing. Site based decision-making compromises equity.
- Our committee premised these recommendations with the assumption there will be a systemic shift in Eugene School District 4J's goals. These would include the significant funding increases necessary to supply and support technology systems; adequate infrastructure staffing to maintain these systems; and, district-wide mandates which would establish minimal technology goals embedded in an articulated K-12 curriculum for every building and program in 4J.

We also believe that some stakeholder groups in the district may identify additional issues. We have listed what we believe those issues may be.

**Staff:** There are varied levels of understanding and anxiety around instructional technology.

**Students:** Students may express concerns regarding Internet censorship on school based sponsored projects. Students in our secondary schools are highly aware of the lack of technology integration into the curriculum as compared to their experience in the elementary schools.

**Parents:** Parents have Internet safety concerns. Parents want to be assured that computers are used for instruction and not games. Parents have varying expectations around censorship.

**Community:** The community is not aware that funds from bond measures cannot be used for computer purchases. The community would like to have input regarding the use of technology. Some community members are concerned about the lack of technology in the schools.

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## ATTACHMENT A

### IMPLICATIONS DEFINED

- (a) **Equity:** 4J is committed to ensuring that each student receives full services without regard to disability, race, color, gender, national origin, ethnicity, sexual orientation, age, religion, marital status, socio-economic status, cultural background familial status, physical characteristics, or linguistic characteristics of a national origin group.

4J is also committed to closing the achievement gap between students while ensuring that all students continue to make academic progress. Closing the achievement gap may require the allocation of additional resources to some schools where there are a high number of low achieving students.

What implications, positive or negative, do the implementation options your group identified have for the district as it continues to focus on equity?

- (a) **Open Enrollment, Neighborhood Schools and Alternative Schools:** 4J is committed to ensuring that all students have equal access to all options that are available within the district and that are appropriate to the student's interests and needs.

4J also wants to assure that both neighborhood schools and alternative schools provide an excellent education program and that neither has an unfair advantage over the other.

What implications, positive or negative, do the implementation options your group identified have on neighborhood schools, alternative schools, and the district's open enrollment program?

- (a) **Program Staffing:** Historically, 4J has given schools a great deal of flexibility in how it allocates the resources they receive as long as the schools meet district, state, and federal requirements. As funding becomes more limited and as mandates, especially those mandates dealing with student achievement, increase there is often more and more pressure to consider program staffing. Program staffing is where the district requires that a certain portion of a school's resources be allocated to a certain program whether it be physical education, counseling, or library services. Currently the district program staffs special education and Title 1, certain student support positions at some schools, a portion of elementary music and, through this year, services that qualify for City levy funding. From time-to-time the district will also make additional funds available to a school to focus on a particular need such as closing the achievement gap.

What implications, positive or negative, do the implementation options your group identified have on program staffing?

- (a) **State and Federal Mandates:** 4J assumes that it will continue to comply with state and federal mandates and that those mandates will influence the implementation options your focus groups will identify. The district also assumes that the result of this planning process will not require it to challenge major mandates such as special education and student assessment. There may, however, be questions about whether some of your implementation options are possible under state and federal law.

What implications, positive or negative, do your implementation options have on the ability of the district to continue to comply with state and federal mandates? As you consider these implications you may want to consider if and how state and federal mandates limit your implementation options. Or you may want to consider if it may be reasonable to consider challenging some state mandates?

For example, if the district was to implement a full day kindergarten program, the state currently funds only half-day programs, and the district would be required to reallocate funds.

- (a) **Student Transportation:** Student transportation is mandated in certain circumstances: for example the state requires that students who live a certain distance from school be transported and the federal government requires that students with disabilities who are transferred to a school other than their neighborhood because of their disability receive transportation services.

What implications, positive or negative, do your implementation options have on providing student transportation?

- (a) **High Schools:** What implications, positive or negative, do your implementation options have on high schools?
- (a) **Elementary Schools:** What implications, positive or negative, do your implementation options have on elementary schools?
- (a) **Middle Schools:** What implications, positive or negative, do your implementation options have on middle schools?
- (a) **Regional Impact (Churchill, North, Sheldon, and South):** Each region in town has its own feeder system and the schools in that region work together to ensure that students transition between schools. Enrollment at elementary and middle schools affects high school enrollment within a region. The students and their families in each region also have differing expectations of their schools. Changing instructional models, limiting the size of schools, and other issues may have different impacts on different geographic regions of 4J.

What implications, positive or negative, do your implementation options have on each of the four regions?

- (j) **Other Implications (Including implications for other focus group topics):** Are there other implications that your group has identified?

## ATTACHMENT B

### LITERATURE REVIEW SUMMARY OF THE RESEARCH ON TECHNOLOGY IN INSTRUCTION

#### Context

Ringstaff and Kelley have noted, “The term ‘technology’ can be used to mean a wide variety of things, from computers to pencils.” They settle on a definition of technology in education that is also used here: “computer-based tools — both hardware and software, the Internet, and computer-based multimedia” (from Cathy Ringstaff and Loretta Kelley, *The Learning Return On Our Educational Technology Investment: A Review of Findings from Research*, 2002).

Use of computers to deliver instruction began in K-12 schools in the early sixties, with the use of simple programs in mathematics and reading that individualized learning by providing students with immediate feedback on their performance together with drill and practice exercises appropriate to their level of learning. By 1975, 55 percent of schools had access to technology and 23 percent were using computers primarily for instruction (Andrew Molinar, “Computers in Education: A Brief History” *THE Journal*, June 1997). By 2003, 91 percent of students in nursery school through 12th grade were using computers (Matthew DeBell and Chris Chapman, *Computer and Internet Use by Students in 2003*, National Center for Education Statistics, 2006).

Today computer use has moved far beyond simple drill and practice to using technology as a tool to facilitate and enhance almost everything that students do. According to a 2005 article from the North Central Regional Educational Laboratory (NCREL), over the last decade, the US has invested more than \$66 billion in school technology (“Critical Issue: Using Technology to Improve Student Achievement,” 2005, Retrieved from <http://www.ncrel.org/sdrs/areas/issues/methods/technlgy/te800.htm#reference>). According to NCREL, “This unprecedented level of investment in educational technology has raised expectations of legislators and the public who are now looking for returns on this investment.”

Although widespread, use of technology is still not equitable. Data released in September 2006 indicated that “Two of every three white students--67 percent--use the internet, but less than half of blacks and Hispanics do,” In addition the report found that “Thirty-seven percent of those from families with incomes below \$20,000 use computers at home, compared to 88 percent of those living in families with annual incomes over \$75,000” (Matthew DeBell and Chris Chapman, op.cit.). Because some groups of students have limited access to computers at home, many look to the schools to provide the computer access that can close the “digital divide.”

#### What Does the Research Say?

Findings on the effect of computers on learning have been uniformly positive. In 1991, James Kulik at the University of Michigan performed a meta-analysis on several hundred well-controlled studies in a wide variety of fields at the elementary, secondary, higher- and adult-education level. He found that computer-based education could increase scores from 10 to 20 percentile points and reduce time necessary to achieve goals by one-third. (James Kulik, and Chen-Lin Kulik, "Effectiveness of Computer-based Instruction: An Updated Analysis," *Computers in Human Behavior*, Vol. 7 No.1-2, pp.75-94, 1991).

In 2000, John Schacter examined what he called the “five largest scale studies of education technology to date” collectively involving over 700 studies nationwide and over the previous decade. He found that students with access to computer assisted instruction, integrated learning systems technology, simulations and software that teach higher order thinking, collaborative networked technologies, or design and programming technologies, show positive gains in achievement on researcher constructed tests standardized tests, and national tests (Schacter, J. *The Impact of Education Technology on Student*

*Achievement: What the Most Current Research Has to Say*, Milken Exchange on Education Technology, Santa Monica CA. 2000, Retrieved from [www.mff.org/publications/publications.taf?page=161](http://www.mff.org/publications/publications.taf?page=161)).

Similar positive effects have been found in specific academic areas, particularly writing. Goldberg et al. conducted a meta-analysis of 26 studies and found that “on average, students who develop their writing skills while using a computer produce written work that is .4 standard deviations higher in quality than those who learn to write on paper” (Amie Goldberg, Michael Russell, and Abigail Cook, “The Effect of Computers on Student Writing: A Meta-Analysis of Studies from 1993 to 2002,” *The Journal of Technology, Learning and Assessment (JTLA)*, February 2003). In 2003 Kulik examined eight meta-analyses covering 335 studies. He concluded that “Most studies carried out during the 1990s found that enrichment programs have positive effects on student writing skills . . .” and “in fact, simply giving students greater access to computers and Internet resources often results in gains in writing skill” (James Kulik, *Effects Of Using Instructional Technology In Elementary And Secondary Schools: What Controlled Evaluation Studies Say*, Arlington, Virginia: SRI International 2003. Retrieved from [http://www.sri.com/policy/csted/reports/sandt/it/Kulik\\_ITinK-12\\_Main\\_Report.pdf](http://www.sri.com/policy/csted/reports/sandt/it/Kulik_ITinK-12_Main_Report.pdf). These meta-analyses and others have shown similar positive effects on science (Sule Bayraktar, “A Meta-Analysis of the Effectiveness of Computer-Assisted Instruction in Science Education,” *Journal of Research on Technology in Education*, Vol 34, No. 2, 2002), mathematics (Wenglinsky, "Does It Compute? The Relationship Between Educational Technology and Student Achievement in Mathematics," Educational Testing Service, 1998) and reading (National Reading Panel, 2000.). Regarding reading, noted literacy researcher Michael Kamil explains, “The key benefits of computer-based reading lessons are simple: They help students practice reading at their own pace and give individualized instruction and immediate feedback -- all when the teacher might be occupied helping other kids” (Michael Kamil, “Reading in a Digital Age,” *Threshold Magazine*, Vol. 5, Fall 2005).

Most of the above studies examined use of the computer as a “tutor,” what Thomas Reeves has called “learning *from* computers” as differentiated from “learning *with* computers,” which is “using technology as a tool that can be applied to a variety of goals in the learning process.” In more advanced usage of computers, technology becomes a tool or resource to help students develop higher order thinking, creativity, and research skills. (1998, cited by Cathy Ringstaff and Loretta Kelley op. cit.) The use of technology in learning promises even more when the computer is used as a tool in the context of project-based learning.

According to Ringstaff and Kelley, in numerous studies of students learning *with* technology, teachers have reported that technology encourages them to be more student-centered, more open to multiple perspectives on problems, and more willing to experiment in their teaching. Ringstaff and Kelley cite studies that found that in technology-rich classrooms, students become more engaged and more active learners, and there is typically a greater emphasis on inquiry and less on drill and practice. They cite other studies that found that technology also encourages student collaboration, project-based learning, and higher-order thinking.

Similarly, a research review by Cradler, McNabb, Freeman and Burchett summarized the work of more than 20 researchers to conclude that “research and evaluation show that technology can enable the development of critical thinking skills when students use technology presentation and communication tools to present, publish and share results of projects. (“How Does Technology Influence Student Learning?” *Learning and Leading with Technology*, Vol. 29, No. 8, May 2002). They too concluded that collaborative activities are key components of successful computer use. A web page on the Center for Applied Research in Educational Technology (CARET) website reviewed ten studies that indicated that “technology can enable the development of higher order thinking skills when students work in collaborative groups while using computers to solve problems” (Retrieved from

<http://caret.iste.org/index.cfm?useaction=evidence&answerID=8>).

### **Factors that Make Technology Successful in the Classroom**

In 2001, in *Oversold and Underused*, (Harvard University Press) Larry Cuban maintained that many computers were “gathering dust” on the edges of classrooms because teachers did not want or did not know how to use them to enhance learning. Whether or not this is still true in 2006, researchers agree that among the factors that determine whether computers will be used successfully in classrooms, adequate training is primary.

Ringstaff and Kelley as well as Cradler and Bridgforth (*Recent Research on the Effects of Technology on Teaching and Learning. Policy Brief*, San Francisco CA: WestEd Regional Educational Laboratory, 1996) and other researchers cite a number of studies that conclude that technology is effective when

- Teachers have adequate training in its use
- Administrators are supportive of technology use
- Computers have adequate technical support
- Computers are integrated into the curriculum and long-term plans of the school, and teachers are included in the integration and planning activities
- There is sufficient access to technology.

Two items in this list, training and technical support, are big ticket items that must be included in planning the integration of technology into the classroom.

Roschelle et al. identify four fundamental characteristics of how technology can enhance both what and how children learn in the classroom: (1) active engagement, (2) participation in groups, (3) frequent interaction and feedback, and (4) connections to real-world contexts. They also emphasize the importance of embedding technology in a broader education reform movement that includes improvements in teacher training, curriculum, student assessment, and a school's capacity for change (J. Roschelle, R. Pea, C. Hoadley, D. Gordin, and B. Means, “Changing How And What Children Learn In School With Computer-Based Technologies,” *The Future of Children*, Vol. 10, No. 2, 2000, pp. 76-101).

Regarding access to computers, Ringstaff and Kelly (op.cit.) report that there is no universal agreement about what is “sufficient.” They cite a West Virginia study (Mann, Shakeshaft, Becker and Kottkamp, 1998) that found that students who had access to computers in their classrooms showed more improvement in basic skills than those who received instruction in computer labs. Ringstaff and Kelley state that the decade-long Apple Classrooms of Tomorrow (ACOT) Study began by offering 1:1 student-to-computer access but “learned that sufficient access did not require a computer on every desk,” and that the ACOT project concluded by utilizing ratios of 5 students to each computer, with an emphasis on group collaborative projects.

Nevertheless, 1:1 computing is one of the most ambitious attempts to close the digital divide. Some researchers have seen handheld computers as a cost effective means to provide 1:1 technology access. A 2002 SRI study looked at the use of handhelds in 100 elementary and secondary classrooms across the United States. Dr. Barbara Means is quoted, as saying that one unique benefit of handhelds is that “students can have a portable device ready-at-hand for learning activities wherever they go.” Surveys revealed that 89 percent of teachers said handhelds were an effective instructional tool, and 93 percent of teachers said that handhelds had a positive impact on student learning (“New SRI International Study Shows Handheld Computers Can Increase Learning in K-12 Classrooms,” SRI, 2002).

In spite of the promise of handhelds, the small screen size of handhelds together with lower prices for new laptop computers are leading educators away from handhelds to one-to-one (1:1) laptop initiatives. In



case studies of 10 schools with 1:1 laptop programs in Maine and California, Warschauer concluded that such programs promote

- Greater student engagement
- More and better writing
- Deeper learning
- Easier integration of technology into the curriculum

Warschauer, however, concluded that 1:1 initiatives would not necessarily improve test scores, or at least not until they had been in operation for a number of years (Mark Warschauer, “Going One-to-One,” in *Educational Leadership*, December 2005).

The Maine Learning Technology Initiative provided all of Maine’s 7<sup>th</sup> and 8<sup>th</sup> grade students and their teachers with laptop computers. Participating teachers reported that

- Laptops helped teachers to more effectively meet their curriculum goals, and individualize their curriculum to meet particular student needs.
- Laptops helped teachers better meet Maine’s statewide learning standards.
- All types of students are more engaged and more motivated to learn; particularly at-risk and special needs children.
- The greatest obstacles in integrating this technology into the classroom are lack of technical support, lack of professional development opportunities, and lack of time.

(David L. Silvernail, and Dawn M. Lane, *The Impact of Maine’s One-to-One Laptop Program on Middle School Teachers and Students: Phase One Summary Evidence*, Maine Education Policy Research Institute, University of Southern Maine Office, February 2004)

A 2005 study of the initial nine months of a 1:1 laptop program in six New Hampshire middle schools had similar findings. Damian Bebell concluded that the data reflected increased use of technology across the curriculum, student engagement and motivation, and teacher-student interactions (Damian Bebell, *Technology Promoting Student Excellence: An Investigation of the First Year of 1:1 Computing in New Hampshire Middle Schools*, Technology and Assessment Study Collaborative, 2005).

For schools without large numbers of computers, one way to make information on one computer accessible to a whole class is through an interactive white board, which is large, touch-sensitive board connected to a digital projector and a computer. The projector displays the image from the computer screen on the board. The computer can then be controlled by touching the board, either directly or with a special pen. The British Educational Communications and Technology Agency reports research that found that interactive whiteboards enable teachers to integrate ICT into their lessons while teaching from the front of the class (Smith H 2001), allow greater opportunities for participation and collaboration (Levy 2002), and allow students to access technology without using a keyboard, increasing access for younger children and students with disabilities (Goodison 2002). (All cited in *What the Research Says about Interactive Whiteboards*, BECTA, 2003)

### **Use of Technology in Special Education and with English Language Learners**

Assistive Technology is the “use of technology to increase, maintain, or improve functional capabilities of a child with a disability.” Research indicates it holds promise for special education. A recent CARET review of nine studies concluded, “Carefully chosen technology applications that provide immediate student feedback and progress monitoring can be more effective than regular group instruction for educationally handicapped students.” The study reviewed tutoring software, and software for dyslexia,

cerebral palsy, autism, hyperactivity, and other learning and behavioral problems. The review noted, “The main theme in this research has been on the creation of learner-centered environments and the development of positive interactions among students” (Center for Applied Research in Educational Technology, *Topic: Student Learning*, Retrieved from <http://caret.iste.org/index.cfm?useaction=evidence&answerID=62>). In 2003, Palmer reported that a technology-based reading intervention program, READ 180, resulted in significant gains in reading fluency and comprehension for special education students, with 18 percent of students no longer needing special education services in reading after one year of intervention (N. Palmer, *READ 180 Middle-School Study: Des Moines Iowa 2000-2002*. Retrieved from [http://teacher.scholastic.com/products/read180research/pdf/DesMoines\\_Study.pdf](http://teacher.scholastic.com/products/read180research/pdf/DesMoines_Study.pdf)).

Technology has also been seen to have many benefits for English Language Learner (ELL) students including individualized learning, an instructional sequence tailored to their specific needs, and an ability to control their own learning. A North Central Regional Educational Laboratory survey of this topic noted that Padron and Waxman (1996) reviewed a number of research studies leading them to conclude that technology is effective for ELLs in part because it motivates students who “are often disengaged from school.” Particularly, they mention the success of using animation software for communicating science concepts to ELL students, programs that emphasize vocabulary learning, phonetic awareness, and basic literacy skills, and hypermedia to individually address levels of fluency, content knowledge and student motivation and interest. (Using Technology to Support Limited-English-Proficient (LEP) Students' Learning Experiences, Retrieved from <http://www.ncrel.org/sdrs/areas/issues/methods/technlgy/te900.htm>).

-----Research Review Compiled by Jo Ann Mazzaella

## ATTACHMENT C

### **JOB DESCRIPTION Certified Technology Coach Eugene School District 4J**

#### Qualifications

- Meet the Eugene 4J School District 4J job description for a teacher, including holding a valid Oregon teacher's license with appropriate grade level/subject area endorsements.
- Demonstrate successful experience as a classroom teacher including the ability to integrate effective use of instructional technology into the teaching and learning environment.
- Demonstrate organizational and communication skills, visionary leadership skills, and interpersonal characteristics necessary to collaborate and work effectively with students, teachers, parents, administrators, community agencies, and project partners.
- Demonstrate knowledge of a collaborative teaching and coaching model for classroom instruction with measurable student outcomes.
- Demonstrate successful experience in the use of Macintosh, PC, and emerging technology in field of education with both adults and students.

#### Skills:

##### Ability to:

- Conduct adult workshops for school staff, provide staff development works, and team-teach with a variety of staff that have varying technology skill levels.
- Assist teachers on how to integrate technology into the learning and teaching environment; work with teachers (and model) effective use of technology and online resources; assist teachers in curriculum development that integrates technology resources into the curriculum.
- Assist teachers in setting up laptop and desktop computers (Apple and PC), printers, scanners, external drives, flash (mass memory) storage units, digital cameras (video and still), LCD projectors, SMART Boards, iPods and other emerging instructional hardware and peripheral devices as it relates to instruction.
- Assist teachers in effectively utilizing instructional software and the Internet within the structure of classroom lessons including programs specifically purchased for this project.
- Align research-based practices in K-12 instructional technology across curricula with the ODE State Technology Plan and the National Educational Technology Standards (NETS).
- Assist in data analysis as related to improving instruction pre and post evaluation.
- Oversee tech support staff as they manage hardware and software issues
- Provide leadership to school Technology Leadership Teams.

**ATTACHMENT D**  
**JOB DESCRIPTION**  
**Technology Support Specialist I**  
**Eugene School District 4J**

**Classification Summary**

Provides basic support for computers, software and other instruction-related technology in schools; provides general assistance to users, and carries out assigned tasks and projects.

The Technology Support Specialist (TSS) series provides school-specific computer support. Classifications in this series differ based upon the complexity of systems and assigned tasks, and the impact of relevant decision-making. Activities are generally focused upon school-specific computer systems, but may also include district-wide responsibilities.

The TSS I works independently to support basic computer and hardware needs, and follows standard procedures to solve problems of limited difficulty and complexity. In comparison, the TSS II requires the works with more complex systems and processes and requires independent analysis and problem solving of medium difficulty and complexity.

**Supervisory Relationships**

Reports to a school principal or assigned supervisor; works independently on assigned tasks. May receive general directions from a higher-level Technology Support Specialist or centralized Central Information System staff.

**Examples of Duties**

1. Provides general end user support and problem resolution, including basic desktop/laptop operating systems and applications; computer hardware; printer set-up and connections; projectors, PDAs, DVDs, internet use, and mobile labs.
1. Responsible for general maintenance and monitoring of desktop and laptop operating system and applications.
1. Responsible for basic setup and configuration of computers, network printers, and portable computer systems; tracks hardware and software problems and monitors systems for efficiency.
1. Provides training to users in the basic use of computer hardware and software; assists users with problem solving.
1. May compile and write user instructions.
1. May set up and run basic reports, and maintain data files; may be responsible for regular backup of data.
1. Participates in the school technology team.

**Required Knowledge, Skills and Abilities**

1. General knowledge of industry standard computer hardware and software.
1. Ability to learn about specialized school systems within a reasonable amount of time.
1. Ability to provide and effectively communicate technical instructions to end-users.
1. Ability to work independently and effectively prioritize assigned tasks.

**Minimum Qualifications for Class Entry**

Two-year Associates Degree in Computer/Technology Sciences or equivalent.

**Work Environment**

Work is performed in an office environment.

D R A F T (5/06)

## ATTACHMENT E

### **JOB DESCRIPTION** **Technology Support Specialist II** **Eugene School District 4J**

#### **Classification Summary**

Provides a variety of comprehensive technology support and centralized management support for computers, software, and other instruction-related technology in schools, including general maintenance and monitoring, problem resolution, and upgrade tasks; assists with implementing enterprise applications; provides assistance and problem resolution to end users.

The Technology Support Specialist (TSS) series provides school-specific computer support. Classifications in this series differ based upon the complexity of systems and assigned tasks, and the impact of relevant decision-making. Activities are generally focused upon school-specific computer systems, but may also include district-wide responsibilities.

The TSS II differs from the TSS I by the complexity of systems and processes, and the requirement to independently analyze and solve problems of medium difficulty and complexity, while the TSS I works with basic computer and hardware needs and follows standard procedures to solve problems of limited difficulty and complexity. The TSS II differs from the TSS III in that the latter independently performs skilled technical work and works with complex systems and processes, requiring the research of complex and non-standardized problems solving approaches.

#### **Supervisory Relationships**

Reports to a school principal or assigned supervisor; works independently on assigned tasks. May receive general directions from a higher-level Technology Support Specialist or centralized Central Information System staff.

#### **Examples of Duties**

1. Provides general end user support and problem resolution, including basic desktop/laptop operating systems and applications; computer hardware; printer set-up and connections; projectors, PDAs, DVDs, internet use, mobile labs, enterprise administrative applications, and specific educational application servers.
2. Responsible for general maintenance and monitoring of desktop and laptop operating system and applications, computer hardware, software inventory, hardware inventory, OS & application patches, and specific educational application servers, monitors. Tracks hardware and software problems and monitors systems for efficiency. Participates in resolution of network issues.
2. Responsible for setup/configuration of computers, network printers, hardware and applications, and portable computer systems.
2. Participates in short and long-range planning; makes recommendations to administration regarding technology vision, innovation, and long-range planning.
5. Responsible for project implementation and carrying out assigned project tasks.
6. Coordinates escalated issues; actively participates on school technology team.
7. Provides training on basic-use of computer hardware and software for users; provides problem solving and suggests effective use of applications and other technologies. May compile and write user instructions.
7. May set up and run basic reports, and maintain data files; may be responsible for regular backup of data.
8. May make purchasing recommendations to school administration for approval and facilitate purchases.

7. Prioritizes daily workload; as required take direction from CIS required to implement district standards within the school. Short-term planning required to implement district standards.
7. Participates in the school technology team.

**Required Knowledge, Skills and Abilities**

1. Demonstrated knowledge and successful experience installing, configuring and troubleshooting industry standard desktop hardware and software.
  2. Ability to effectively communicate technical information to non-technical staff, including ability to train individual staff members on basic software usage.
  3. Ability to implement district-standards with limited supervision.
  4. Ability to work independently, recognize the priority of assigned and projects.

**Minimum Qualifications for Class Entry**

Two-year Associates Degree in Computer/Technology Science or equivalent.

Two years of progressive experience supporting Apple and Windows desktop computers.

One year experience managing basic configurations on a server to facilitate end-user access (setting up accounts, directory rights, etc.)

**Work Environment**

Work is performed in an office environment.

D R A F T (5/06)

## ATTACHMENT F

### TECHNOLOGY PLAN OF ACTION EUGENE SCHOOL DISTRICT 4J

#### Plan of Action – Narrative Form Administrative Technology Goals

**Goal A1: Replace outdated information system.** – The last technology plan began the process of moving from legacy hardware and applications to current technology and modern applications. The following actions are being planned:

1. Continue implementation of new district student information system (eSIS) – During the term of this plan the district will continue to implement and integrate additional modules of the eSIS student system. Anticipated modules are the Parent Assistant, Mobile Assistant and Executive Assistant.

*Monitoring and Evaluation:* The eSIS implementation team meets weekly to set goals and assess success. A product called Principalm has replaced the Mobile Assistant and the Executive Assistant modules are being replaced by a new data warehouse system.

2. Implement Special Education Module in eSIS – Beginning in 2003-04 and continuing in 2004-05, a new special education system called WebIEP was developed and implemented. This system was necessitated by several failures in a prior Filemaker system. The WebIEP system is intended as a transitional system before implementing the eSIS special education module. District staff is participating in an Oregon eSIS consortium special education working group with other Oregon entities to refine this module prior to implementation in 2006.

*Monitoring and Evaluation:* The 4J ESS Department planning team meets monthly to set goals and evaluate success. The ESS Department is still planning on using a temporary system at least through 2006-07 before implementing the Special Ed system in eSIS.

3. Implement new financial and human resources systems – Clackamas ESD will host 4J financial and human resources systems on Lawson Software with conversion of the HR/Payroll system beginning in 2004-05, continuing and followed by other financial systems in 2005-06 and 2006-07. Systems will be released to schools and departments beginning in 2006-07 and carry into 2007-08.

*Monitoring and Evaluation:* The business systems conversion project team meets weekly to address conversion issues and revise the project work plan as needed. The new human resources/payroll system will become operational as scheduled, that is, for the July 2006 payroll. Work has begun on the conversion of the district's financial systems, including the general ledger and procurement systems, with completion scheduled for January 2008.

4. Migrate intranet to a new platform – This project was postponed from the last plan. Identification and implementation of a new intranet system will occur during the 2005-06 or 2006-07 school year.

*Monitoring and Evaluation:* The CIS Department is currently evaluating exactly when this project will take place.

5. Implement a district backup system – The district currently has several backup systems. During the 2005-06 year a new backup system will be selected and implemented.

*Monitoring and Evaluation:* A new system (NetApp) was selected during the 2005-06 year and initial implementation has taken place. The CIS management team meets monthly and will move this project forward during 2006-07.

6. Implement a disaster recovery strategy – The district has been working in consortium with other districts for the past several years. During this plan term the district will plan and test a disaster recovery strategy.

*Monitoring and Evaluation:* This project is dependent on the new district backup system. Plans are being made to partially implement this project during 2006-07.

7. Implement a new district library system – This item was postponed in the previous plan due to the simultaneous schedule for the new student system. The existing library system is a school-designed system that has very little vendor support and no true district functions like a central catalog. Several possible vendors have been identified and funding has been budgeted. Plans are to select and implement a new system beginning with either the 2005-06 or the 2006-07 school year.

*Monitoring and Evaluation:* A new library system has been selected, installed and training during 2005-06. Full implementation will occur during 2006-07. An implementation team meets every other week to guide this project.

**Goal A2: Improve efficiency by implementing new software applications.**

1. Continue to interface additional systems to central directory structure – The district implemented a central directory server during 2004-05. Currently e-mail, calendaring, web services and wireless security interface to the directory.

*Monitoring and Evaluation:* This is an ongoing effort whenever a new application is implemented in 4J. The CIS management team meets monthly to determine new efforts in this area.

2. Train staff on new central calendaring system – A new calendaring system has been implemented and piloted during 2003-04. Training will now occur so all central office staff can begin to use it.

*Monitoring and Evaluation:* This project was completed during the 2005-06 school year.

**Goal A3: Provide appropriate electronic access for teachers, parents, and youth-serving agencies to student information as permitted by public information laws and school board policies.**

1. Implement Teacher Assistant gradebook in student system – Some teachers are currently piloting the gradebook system during the 2004-05 school year. The gradebook will become available to all secondary teachers during the 2005-06 school year. EasyGrade Pro software application is being implemented in some schools for easy web posting of grades.

*Monitoring and Evaluation:* The gradebook module is available to all secondary teachers however many schools have decided to use other third-party gradebook systems so little effort is being expended on this project at this time.

2. Implement Parent Assistant module of eSIS – This module will permit parents to access information about their student(s) such as attendance, grades, demographic information, incidents and course requests. Implementation will occur in 2004-05 and continue into 2005-06.

*Monitoring and Evaluation:* This project is somewhat dependent on the eSIS gradebook and, since few teachers are using the eSIS gradebook, the implementation of this module is being delayed.

3. Implement a data warehouse system – As the state and federal governments continue to increase reporting requirements and as more and more teachers and administrators are demanding and using data for educational decisions, it is becoming imperative that a data warehouse be implemented. The district will work in consortium with several other entities to implement this system over the term of this plan.



*Monitoring and Evaluation:* A data warehouse steering committee has been established to guide this project. A data analyst has been hired, a vendor selected, hardware and software purchased, and implementation begun. The steering committee monitors and evaluates the progress.

## **Educational Technology Goals**

### **Goal E1: Establish technology leadership roles and resources.**

1. Support Instructional Technology Specialist positions – The district currently funds two instructional technology specialists (1.5 FTE total) from Title IID formula and competitive (1.0 FTE) and the District general funds (.5 FTE). In 2006-2007 there will be one instructional technology specialist (1.0 FTE) from the District General funds. The instructional technology specialist works closely with administrators, Instruction Department staffs, and school staffs to provide professional development workshops for teachers that will help them improve academic achievement by integrating technology into the teaching and learning environment. These positions exist specifically to assist schools with the integration of technology into the curriculum. They assist with technology grants, plan and deliver workshops on technology integration into all areas of the curriculum for staff, maintain a website for Technology Integration into Learning and Teaching (TILT), maintain a software preview library, consult with schools, administer Title IID funds, and work with targeted schools on technology tools for curriculum integration to help close the achievement gap.

*Monitoring and Evaluation:* Year-end review and assessment takes place each year through the Title IID final report to ODE.

2. Create a Technology Steering committee to study the technology needs and implementation of the district - The membership on the committee should include teachers, administrators, students, parents, business and central staff.

*Monitoring and Evaluation:* A committee will meet each month during the school year to review, discuss, and evaluate district issues around instructional technology.

3. Identify technology resources and publish on TILT (Technology Integrated into Learning and Teaching) website - The TILT website provides curriculum resources and information for teachers. The primary goal is to keep the site updated with current information and hardware recommendations.

*Monitoring and Evaluation:* The TILT site is regularly updated and maintained at the following URL <http://www.4j.lane.edu/tilt>.

4. Build technology leadership by working with the technology representative at each school to facilitate the integration of technology into the curriculum - Communicate with a representative in each 4J K-12 building to function as the liaison between the Ed Center and the school staff for technology and software updates (including operating system upgrades), trends, and strategies for integrating technology into the curriculum. This communication will take place through three yearly meetings, the TILT web site, videoconferencing, instant messaging and email.

*Monitoring and Evaluation:* An email distribution list was created to disseminate current information to tech reps. Three meetings are held per school year to disburse information from the CIS and Instruction.

5. Identify teacher role models and innovative projects to highlight for observation and mentoring - Continue to post on the TILT web site descriptions and photos of projects and teachers from 4J K-12 classrooms that integrate technology into the core curriculum.

[http://www.4j.lane.edu/tilt/tools\\_inuse/](http://www.4j.lane.edu/tilt/tools_inuse/)

*Monitoring and Evaluation:* A rolling submission date for schools to send photos, activities, lessons, etc. for posting on the TILT website for dissemination throughout the district.

6. Administrators provide a leadership role to support a new learning and teaching dynamic and promote innovation of technology integration - Project LEAD, funded by Wallace Readers' Digest grant, targets the building of new leadership capacity in the district to ensure that students receive a comprehensive educational program and continue to improve academically.

*Monitoring and Evaluation:* Regularly scheduled workshops for administrators are available throughout the school year (e.g. excel, data warehouse analysis and interpretation).

Administrators are also encouraged to attend building based instructional technology workshops.

**Goal E2: Adopt meaningful standards to measure the progress of teachers and students in obtaining the technology skills they need.**

1. Adapt and implement National Educational Technology Standards (NETS) for students, teachers and administrators – The NETS have been developed over a period of years by a wide variety of participants including K-12 and higher education professionals. According to recent information on the NETS website (<http://cnets.iste.org>), the Oregon Department of Education has "...adopted, adapted or aligned..." with the NETS for students and administrators.

*Monitoring and Evaluation:* Each school has a copy of the NETS in their building. The tech reps are responsible for making it available to all staff members and facilitating the development of a scope and sequence for each building. A K-12 specific skill scope and sequence is being developed regionally.

2. Provide training for certified staff to meet the standards – This is an ongoing effort that will continue to be pursued over the course of this technology plan.

*Monitoring and Evaluation:* Regular district sponsored workshops are scheduled throughout the year and opened to all teachers. Building based workshops are also scheduled upon school requests.

3. In keeping with NCLB guidelines, provide training for para-professional staff use of technology as a tool for helping students – This is an ongoing effort that will continue to be pursued over the course of this technology plan.

*Monitoring and Evaluation:* Instructional technology training is integrated into the regularly scheduled para-professional training sessions.

4. Refer to NET standards when hiring new staff – During the process of hiring new teachers and administrators, the District will include questions that provide insight to their understanding of technology standards as defined by the National Education Technology Standards for Teachers and Administrators.

*Monitoring and Evaluation:* Building administrators are encouraged to ask potential candidates to show evidence of their ability to integrate technology into the curriculum during initial interviews.

5. Refer to the State Technology Common Curriculum Goals – These goals will be referenced when discussing, planning, developing and sharing new curriculum that integrates technology.

*Monitoring and Evaluation:* The state Technology CCGs are posted on the TILT site with a link to ODE for further information.

**Goal E3: Integrate technology into the K-12 curriculum including accessing, evaluating and creating information to improve student academic achievement.**

1. Focus on individualized instruction and project based learning activities that are aligned with State academic standards – One of the great advantages of technology is the capability for students to progress at different achievement levels and rates. Superintendent goals point directly to the use of technology in this way to assist all students to reach their individual potential.

*Monitoring and Evaluation:* Teachers are using a variety of assessment tools to monitor student progress including DIBLES and 4J Reading Assessment. Schools also have access to online subscriptions such as NetTrekker and Achieve3000 where reading levels are lexiled to provide for individualized learning.

2. Continue professional development for staff on basic and advanced uses of application software – As staff become increasingly comfortable with using applications such as word processors, digital media and presentation software, they are more willing to take risks with the implementation of technology into their curriculum.

*Monitoring and Evaluation:* Using PETI for online assessments of teachers skills will help determine the scope and kind of professional development needed for 4J staff.

3. Provide ongoing staff development workshops for technology curriculum integration that are aligned with State academic standards, NETS, and state technology Curriculum goals.

*Monitoring and Evaluation:* Continuation of workshops already offered and funded by the district and Ed Tech funds.

4. Collaborative Learning - Provide workshops for teachers that focus on collaborative projects and strategies to integrate email, blogs, wikies, the World Wide Web, collaborative online writing, and online projects into the daily learning and teaching environment.

*Monitoring and Evaluation:* District upgrade to iLife '06 provides controlled access to creating classroom blogs, podcasting, and webpages giving students a closed environment to publish their work.

5. Provide ongoing support for media specialists as school information specialists – Support for media specialists and aides to be school and district leaders in information literacy which is the ability to access, evaluate, manipulate and use information. Because today's student lives and learns in a world of readily available information, a major challenge for media specialists and teachers is to guide students in accessing, evaluating, manipulating, presenting, and using this information appropriately.

*Monitoring and Evaluation:* FTE provided to all schools for library media specialists and/or library adds. District subscriptions to WorldBook Online, Britannica Online, and NetTrekker are provided for student research. Usage reports can be monitored.

**Goal E4: Provide teachers and students with access to sufficient, operational, and innovative technological tools that will be replaced and/or updated as needed to maintain functionality and currency.**

1. Provide each teacher with a networked computer in his or her classroom. All elementary and middle schoolteachers have a computer in their classroom. At the high school level, many teachers only have access to a computer in a department office setting. As 4J moves to the new student information system (eSIS), we will have the ability for teachers to take attendance online therefore requiring a networked access device (computer or PDA) in each classroom.

*Monitoring and Evaluation:* 4J schools are moving towards a laptop computer assigned to every

teacher. Currently one-third of our K-8 schools have achieved this goal. In 2006-2007 more schools will be providing laptops to teachers.

2. Adopt recommended ratio of 4:1 students to computer - The Oregon Quality Education Model recommends a student to computer ratio of 6:1 with a replacement cycle of five years. The 4J Schools of the Future – Educational Technology Task Group recommended a student to computer ratio of 4:1 with a replacement cycle of three years. Although 4J has achieved a ratio of 5:1, the replacement cycle is about seven years resulting in students learning and using old technology and applications. To achieve the goal of individualized instruction and project-based learning, 4J will need to invest in improving the replacement cycle and lowering the ratio. This is a difficult task in a site-based district.

*Monitoring and Evaluation:* District purchased mobile wireless laptop labs for every school in the 2005-2006 school year with a refresh cycle of three years to address the needs for online testing (TESA). Ed Tech Grant money continues to provide funds for infusing technology into the schools for students.

3. Budget capital equipment replacement – Appendix L details budget amounts for equipment, software and textbooks totaling over \$1.3 million. Schools make the decisions on how this funding is allocated with past experience showing around 50% being spent on technology hardware and software.

*Monitoring and Evaluation:* Site-based technology budget decisions in 4J schools are being done by newly forming school Technology Leadership Teams (TLT). These Teams are creating 3-year plans for technology purchases and replacements based on instructional needs. In 2006-2007 half of the schools will have established teams with more to following in subsequent years.

4. Phased in deployment of OS X – This operating system from Apple Computers has been deployed in 90% of our elementary and middle schools. The remaining 10% are planned for the 2004-05 school year. OSX provides a much greater capability for the Apple platform as it is based on a Unix environment.

*Monitoring and Evaluation:* District purchase of OSX license for all capable computers in the schools. By the fall of 2006 all computers will be updated.

5. Student access to technology during non-school hours –. Currently, the BEST grant provides free/low-cost after school and evening programs for K-8 students and families. Over 30 community organizations have partnered with BEST to provide these programs, which offer students a safe haven at school sites. Students receive academic assistance and participate in a variety of activities, including open computer labs. In addition to BEST, River Road Family Center and Howard Community Center provide drop-in computer labs for use by 4J families that are equipped with Mac and PC technology.

*Monitoring and Evaluation:* The District continues to write grants that support technology use in non-school hour programs for 4J families.

6. Provide access to innovative technology tools – As funding opportunities become available, 4J will continue to invest in innovative technology tools to determine their effectiveness in the teaching and learning environment. Devices currently receiving attention are digital cameras/camcorder, wireless laptops, projectors, interactive whiteboards, handheld computers, and tablet PCs.

*Monitoring and Evaluation:* In addition to other private grant funding, Title IID (Ed Tech) formula funds and, Title IID competitive grant funds help to provide the acquisition of emerging technologies. A full description of the plans for these funds is covered in the Current Technology Status.

7. Wireless devices – 4J has an increasing number of “Computers on Wheels” (COWS) in the elementary and middle schools. The four new schools (two elementary and two middle schools) will have wireless capabilities. This wireless deployment has caused the District to advance the timeline into finding a security package for the wireless infrastructure. Roving Planet software is now in place and being assessed on a daily basis. CIS will continue to track the standards around wireless device deployment to accommodate their usage in the classroom. The importance of this type of deployment is to bring technology to the students rather than students to the technology. *Monitoring and Evaluation:* The deployment of district purchased TESA COWS has increased student use in Elementary, Middle, AND high schools. Plans are in progress for moving toward a 1:1 laptop deployment in one of our high school “small schools” as well as three of their “feeder” middle and elementary schools.

8. Provide online information resources –With District, ESD and state-wide funding teachers and students have access to several networked information resources: EBSCOhost, World Book, Encyclopedia Britannica, Blackboard and United Streaming. *Monitoring and Evaluation:* The majority of the online subscriptions provide usage statistics. These stats will provide metrics for further subscription renewal and purchases.

### **Infrastructure Technology Goals**

#### **Goal II: Upgrade data network to increase capacity and reliability.**

1. Continue to replace portions of Wide Area Network – The current wide area network is a combination of fiber segments and rented T1 lines from Qwest Communications. Funds from the May 2002 GO bond will be used to upgrade the fiber ring to the high schools and replace the T1 links to the eight middle schools and some of the elementary schools. *Monitoring and Evaluation:* All high and middle schools now have fiber connections to the wide area network. Seven elementary sites have also received fiber connections. During 2006-07 the remaining sites will be connected via a wireless network or additional T1 links to provide increased connectivity.

2. Install new router and switch technology – Network equipment within buildings is now ten years old. These routers and hubs will be replaced using funds from the May 2002 GO bond. The replacement equipment will allow for greater bandwidth in conjunction with the Wide Area Network. *Monitoring and Evaluation:* This equipment has been installed in all sites having fiber connections. The remaining sites will receive new equipment during the 2006-07 year.

3. Implement voice services over the data network – Technology advances make it possible to deliver voice services over the data network thus consolidating into a single network. We are using this implementation in the two new elementary schools and two new middle schools as they come online. *Monitoring and Evaluation:* This project is complete in the new schools mentioned above. Additional implementations will occur when bond funding is available.

4. Expand district voice mail system – The current district system presently serves the Ed Center, Facilities and North Eugene High School. The remainder of the district is served by the Lane Council of Governments (LCOG) voice mail system. For several years LCOG has asked 4J to plan on moving to our own voice mail system. This move will require equipment upgrades at the Ed Center and each of the high schools. *Monitoring and Evaluation:* Funding for this project has been approved, equipment orders and implementation will be completed during the 2006-07 year.

## **Goal I2: Collaborate with community on network projects.**

1. Collaborate with EWEB – 4J currently leases a fiber ring from EWEB that connects our four high schools and the Ed Center. We are also working with EWEB on fiber laterals between the high schools and our middle schools. We will continue this fiber roll out to elementary schools as funds allow.

*Monitoring and Evaluation:* Remaining bond funds for expansion of the WAN are now being targeted for a wireless implementation to increase bandwidth to the remaining schools. However we will continue to talk with other public agencies about working in collaboration with them if the opportunity arises.

2. Partner with other governmental agencies on the PAN – The Public Agency Network is a consortium of public agencies including EWEB, LCOG, City of Eugene, City of Springfield, Lane ESD, Eugene SD, and LTD. This consortium is sharing fiber where possible to reduce costs and increase connectivity.

*Monitoring and Evaluation:* Remaining bond funds for expansion of the WAN are now targeted for a wireless implementation to increase bandwidth to the remaining schools. However we will continue to talk with other public agencies about working in collaboration with them if the opportunity arises.

3. Partner with other districts and ESDs on common network solutions – We will continue to work with other districts and ESDs where 4J has consortium interests that will benefit both parties.

*Monitoring and Evaluation:* There are no current initiatives associated with this goal.

## **Goal I3: Investigate and Implement new technologies.**

1. Continue to implement wireless network devices and security – The district has implemented wireless solutions in several school buildings. Some implementations have been school wide in the case of new school buildings while others have been in limited portions of buildings. We have also implemented a wireless security solution that can be expanded to new sites as required.

*Monitoring and Evaluation:* The Network Services Group with the Computing and Information Services Department monitors and evaluates the use of the wireless network devices. Software upgrades to the security solution are applied as they become available. The network will be expanded during the 2006-07 year with the addition of wireless in one new school and two older schools.

2. Expand video services – Each high school and the Ed Center has video conferencing equipment that can be used within or outside the district. Video services will be provided as requested by departments or schools.

*Monitoring and Evaluation:* Currently there is very little video conferencing occurring in school however central staff uses videoconferencing for administrative purposes.

3. Continue to replace/upgrade central servers – Demand for storage and speed on servers located in the equipment room has increased drastically. Several of these servers are very old and will be replaced or upgraded as funding allows.

*Monitoring and Evaluation:* Staff members in Computing and Information Services monitor and maintain these central servers. A plan is in place to replace servers on a periodic basis and many have been replaced in the 2005-06 year with other planned replacement during 2006-07.

## **ATTACHMENT G**

### **OREGON DEPARTMENT OF EDUCATION TECHNOLOGY COMMON CURRICULUM GOALS**

1. Demonstrate proficiency in the use of technological tools and devices.
1. Select and use technology to enhance learning and problem solving capacity.
1. Access, organize and analyze information to make informed decisions, using one or more technologies.
1. Use technology in an ethical and legal manner and understand how technology affects society.
1. Design, prepare and present unique works using technology to communicate information and ideas.
1. Extend communication and collaboration with peers, experts and other audiences using telecommunications.