

Element III—Infrastructure, Hardware, Technical Support, and Software

H. Infrastructure Needs, Technical Specifications, and Design—Section 11 (See also Appendix D)

Regional Fiber Optic Network

In 1997 a 165 mile fiber optic "highway" was installed throughout Calhoun and Branch Counties linking fifteen high schools including Pennfield High School, a K-8 school district, two intermediate school districts, two career centers, and four higher education institutions including Albion College, Kellogg Community College, Olivet College, and Western Michigan University. The fiber is currently being used to receive Student Services and Internet access at all Pennfield Schools locations.

Pennfield Network Configuration

Pennfield Schools passed a \$27,915,000 bond June 14, 2004. The bond includes erecting, furnishing and equipping a new high school, including an auditorium; acquiring and installing education technology; developing and improving athletic/practice fields and site improvements. During the construction process most of the servers were moved to the new high school.

There is a campus local area network that includes Pennfield High School, Pennfield Middle School, Dunlap Elementary, and the Pennfield Transportation building. It consists of 900 category five or six cable drops throughout the buildings with a minimum of three cable drops in each room. There are four labs in the high school including an Instructional Computer lab, an Open Lab, a Business lab, Art/Journalism lab and Applied Technology Lab. There are Instructional Computer labs in the Middle School and Dunlap Elementary. The media centers in the high school and middle school have computer areas and use Follett as the circulation system.

The cabling is strung in divided wire mold raceway with electrical power on the other half of the raceway throughout the District with the exception of the high school. A twelve strand fiber backbone connects the three buildings. Pennfield High School has a gigabit Ethernet Backbone connecting its four network closets. A MDF resides in Pennfield High School that includes servers, patch panels, the district firewall, routers, and switches. There is a combination of 10/100/1000 Ethernet speeds throughout the system. Ten IDF closets were constructed in the following places:

1. Middle School Computer Lab
2. Middle School Storage Room
3. Middle School Classroom
4. Middle School Band Room
5. Middle School Applied Technology Lab
6. Dunlap Counselor's Closet
7. Dunlap Computer Lab
8. Dunlap Classroom
9. Dunlap Storage Room
10. Transportation Office

All District buildings include wireless technology which allows connectivity.

Purdy and North Pennfield Elementary Network Project

There are over 500 category five cable connections, dedicated electrical wiring, a new fire alarm system, exit lighting, TVSS units, and network electronics at Purdy and North Pennfield. A minimum of eight network connections are in each classroom. Each building has two network cabinets with two file servers, patch panels, and supporting electronics. In 2008/2009 Pennfield Schools connect Purdy and North to the main campus using fiber.

Hardware Inventory

| | PU | NP | DUNLAP | MS | HS | Total |
|----------------------|-----------|-----------|---------------|-----------|-----------|--------------|
| CPU | 47 | 49 | 82 | 158 | 164 | 500 |
| Laptop | 22 | 21 | 66 | 134 | 460 | 703 |
| Netbooks | | | | | 400 | 400 |
| Printer | 21 | 21 | 37 | 56 | 46 | 181 |
| Projector | 3 | 2 | 7 | 33 | 33 | 78 |
| Camera | 5 | 6 | 13 | 13 | 35 | 72 |
| TV | 13 | 15 | 22 | 44 | 9 | 103 |
| Sound Systems | 12 | 12 | 0 | 1 | 29 | 54 |
| Tablets | 1 | 1 | 5 | 7 | 44 | 58 |

| | | | | | | |
|------------------------|---|---|----|----|----|-----|
| Phones | 5 | 7 | 9 | 18 | 28 | 67 |
| Servers | 2 | 2 | | | 21 | 25 |
| Switches | 9 | 4 | 9 | 18 | 28 | 68 |
| Surveillance | | | | | | |
| Cameras | | | 7 | 16 | 53 | 76 |
| Storage Devices | 1 | 1 | | | 2 | 4 |
| Wireless Access | | | | | | |
| Points | 2 | 2 | 15 | 17 | 81 | 117 |

Other items

Transportation: phones, computers, wireless, switches

Wireless Controllers – 3

Miscellaneous cabling throughout the District

Miscellaneous software (Microsoft, Zangle, Curriculum Related Software, etc...)

E-mail System

GroupWise version 7.0 is used on the e-mail server. All district employees must take GroupWise and network training and sign an Acceptable Use Policy before they are issued a network and e-mail account. E-mail is accessible through the Pennfield network and on a GroupWise website. The system is monitored by the Network Administrator. Messages are run through a gateway at Calhoun ISD filtering spam and viruses.

Internet Filtering System

An iPrism Internet filtering appliance with an iPrism subscription is the Districts Internet Filtering solution. The system is monitored by the Network Administrator and has conformed to the Children’s Internet Protection Act (CIPA). iPrism subscription is set to automatically update site categories daily. Additional sites are blocked as needed.

Telephone System

The District presently runs a Voice Over Internet Protocol (VOIP) telephone system installed the summer of 2007. There are presently over 50 phones connected to this system. It allows the District control over the features and rights assigned to users including call forwarding and voice mail. This system includes hardware (phones, servers, switches, etc...) software, installation and maintenance. The District has installed fiber cables from the high school to Purdy and North Penn Elementary which will allow more flexibility with the VOIP phone system.

A three-year leasing and service contract was signed with Climax Telephone Systems (CTS) in January 2007 to support a centrex telephone system. These phones are used for fax machines, emergency and elevator lines, and other non VOIP phones. The District will continue to support two T-1 lines supplied by CTS as we transfer to the fiber.

Universal Service Funds are applied for yearly on the eligible segments of centrex system. An average 44% discount rate has been approved on local and long distance phone service through this program.

Student Services/Payroll/Human Resources/Finance

Pennfield Schools has shared academic and administrative resources with twenty-five other school districts. Support is given through the Calhoun Intermediate School District (CISD) and Wayne RESA. According to the CISD it is their mission to "...deliver administrative services, classroom services, world-wide communications, staff development, and technology management, while utilizing local, regional, and world-wide providers." The Zangle Desktop Student Information System was implemented during the 2002-2003 school year. The Zangle software includes modules that cover all aspects of managing student information including scheduling, enrollment, attendance, grade reporting, health records, behavior records, transcripts, test management, and student accounting. All teachers record daily attendance using Zangle. All teachers in grades four through twelve are using the gradebook feature to keep records and report grades. These teachers are also sharing this information with other teachers and parents. Parents and students are able to connect to the student information system of the Pennfield School District. They can log on to a secure website and see current school information including news and grades. Cyborg and Smart is the current Payroll/Human Resource system. RAMS is used for Finance.

Standardized Software and Resources

- Nothing less than Windows XP Service Pack 2
- Nothing less than Microsoft Office Pro 2000
- Open Office 3.0
- Netware [most current version through Novell School License Agreement (SLA)]
- GroupWise (most current version through SLA)
- ArcServ BrightStor v9.0
- Follett

- Internet Explorer version 7
- Mozilla Firefox version 3
- Fonts4Teachers
- Inspiration
- Kidspiration
- Trend Micro AntiVirus
- iPrism
- Career Scope
- My Dream Explorer (web based)
- Discovery Video Streaming (web based)
- Information Technology Training Initiative
- Adobe Photoshop Elements and Premiere Elements
- Reading A to Z (web based)
- Study Island (web based)
- Type to Learn
- Moodle
- Kid Pics
- Graph Club
- Mac OS X Server 10.5 (Leopard)
- Mac OS X 10.5 (Leopard)
- Final Cut Studio 2.0
- Adobe Creative Suite 3 Design Premium
- Adobe Illustrator CS3
- Adobe InDesign CS3
- Adobe Photoshop CS3
- Adobe Dreamweaver CS3
- Adobe Flash CS3
- Audacity
- Garage Band
- iCal
- iChat
- iDVD
- iMovie HD
- iPhoto
- iWeb
- KompoZer
- Photo Booth

- NeoOffice
- Quicktime
- Quicktime Broadcaster
- Safari
- Lanschool
- Data Director
- Photostory 3
- Google Earth
- Adobe Acrobat
- Adobe Acrobat Reader
- Premiere Assistive Technology Suite
- Free Mind
- Photo Filtre
- Picassa
- GimpShop

Technical Support

Pennfield Schools provides sufficient funds to maintain technical assistance from the following sources:

- A full time District Technology Director
- A full time Instructional Technology Coordinator
- One forty hour Technology Support person
- One part time Technology Support person
- A full time Network Administrator
- Outside technical service vendors

A web based Helpdesk is used by all Pennfield Staff when the assistance of the Technology Department is needed. The system is e-mail driven and allows the Technology Director to assign problems to appropriate technology staff. The end user is kept updated through e-mail on the status of their submitted problem/request and all communications between technology staff as they work on the problem/request. The program builds a knowledge base that can be searched and used as a reference tool. It also generates reports that tell such things as time on task, categories serviced, building requests, and staff productivity.

I. Increase Access—Section 12

Future Technology Infrastructure

District

- Broadcast capabilities in all buildings
- Additional mobile labs in all buildings
- Phones or phone access for all necessary staff
- Voice mail for all necessary staff
- Zangle Student Connect to all buildings
- Handhelds or wireless technology for all students and staff
- Online classes for credit or credit recovery
- Technology Curriculum aligned with State and integrated in all curriculums
- Additional assistive technology in all buildings
- Improved Automating Food Services
- Video Conferencing capabilities in all buildings
- Video over IP
- Online Assessment
- Audio enhancements in all classrooms
- Online courses or online supplemental resources using MLToolbox, Moodle or other products.
- All Teachers having a website or web presence.
- Students using social networking appropriately
- Students using technology appropriately and understanding the consequences of inappropriate use such as cyberbullying.