

**CAZENOVIA CENTRAL SCHOOL DISTRICT
TECHNOLOGY PLAN
Revised June 2007**

District Technology Committee

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I. Executive Summary

- A. District Mission Statement** – Each individual will strive to attain his/her potential in a safe learning environment in which the entire school community encourages self-worth, a sense of responsibility, a caring attitude, an appreciation for learning and distinguished achievement of required academic standards.

- B. Technology Vision Statement** – Cazenovia Central Schools is committed to the effective use of current educational technologies in order to enhance achievement by all students. This will be accomplished by the constant review of new technology and how this technology can be integrated into the classroom through curriculum development, classroom instruction, and by providing teachers and administrators with training opportunities in order to learn or stay current with technological advances.

- C. Executive Summary** – The district currently has an infrastructure in place that utilizes current technology. All classrooms have Internet access and classroom computer clusters. All school buildings have at least one computer lab and the district has four mobile computer labs. The existing curriculum development process also includes the use of technology in the classroom in accordance with the New York State Regent’s standards. Currently, the district has a student to computer ratio of 2.2:1.

The district is committed to maintain the existing infrastructure and student to computer ratio. The district is also committed to staff training in order to keep staff current in the use of technology and how to properly integrate technology into the classroom in order to improve student achievement. In order to support this commitment, the district administration and board of education have budgeted and planned for expenditures necessary to provide for educational technology. These expenditures include the replacement of computers and servers, the purchase of grade appropriate educational software, the purchase of classroom projectors and ELMOs, upgrading of computer wiring and Internet access, staff development and training, and the supplies, staffing, and maintenance necessary to support the use of educational technology.

II. Technology Objectives and Plans

A. Overview

1. Cazenovia Central Schools has created the following objectives related to the use of technology within the school district.
 - To maintain the existing student to computer ratio.
 - To effectively use current technology, as available.
 - To maintain connectivity between buildings and to the Internet.
 - To offer training sessions for teachers, administrators, and support staff.
 - To enable easy access of student and instructional information by staff, students and parents.
 - To utilize current technology to improve communication and sharing of information with students, parents, staff and members of our community.
 - To improve the integration of technology into curriculum, instruction and assessment.
 - To purchase and support software and interactive web resources in order to support our instructional goals.

2. Cazenovia Central Schools believes in having technology-based standards that are integrated into curriculum in order to facilitate learning. The standards used by the district will be in alignment with N.Y.S. standards. The integration of technology standards must be grade level appropriate and the instructional staff is encouraged to use the following standards as guidelines for planning technology-based activities. The district through budgetary support, in-service training and the curriculum review and development process will promote the use of technology-based standards.
 - Teachers and administrators include the grade or content area appropriate use of technology in curriculum documents (see examples in appendix I).
 - Students and teachers demonstrate a sound understanding of the nature and operation of technology systems.
 - Students and teachers are proficient in the use of technology.
 - Students and teachers understand the ethical, cultural and societal issues related to technology.
 - Students and teachers practice responsible use of technology systems, information and software.
 - Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

- Students and teachers use technology tools to enhance learning, increase productivity, and promote creativity.
 - Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.
 - Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
 - Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
 - Students use technology to locate, evaluate, and collect information from a variety of sources.
 - Students use technology tools to process data and report results.
 - Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.
 - Students use technology resources for solving problems and making informed decisions.
 - Students employ technology in the development of strategies for solving problems in the real world.
3. Cazenovia Central Schools commits itself to provide the necessary technology infrastructure to support the curriculum goals stated above. This includes all appropriate hardware, software and connectivity to meet these goals.

- All classrooms will be wired for network and Internet access at a minimum of Cat 5-specification wiring.
- All buildings will be wired with a fiber backbone needed to support connections to the classrooms and the building Intranet, District Intranet and the Internet.
- The Emory Avenue Complex and Burton Street Building will be interconnected to provide Intranet and Internet access. Currently, Internet access is provided by an Ethernet over fiber connection (1 gigabit).
- The district will be connected to OCM BOCES via fiber (100 megabit) connection to provide connectivity with BOCES & BOCES districts as well as receiving Internet service via OCM BOCES.
- High-speed (1000MB/100MB/10MB) switches and routers will be used to manage connectivity throughout the building backbone.
- Where appropriate, wireless networking will be provided (e.g.. Cart based laptop labs & clusters).
- Instructional and administrative workstations and servers are generally isolated on separate domains, with limited access through a router.
- Network servers will be provided for Administrative and instructional use. The administrative servers will be located at a different site than the instructional equipment. The servers will provide for network

storage of administrative, faculty & staff and student data. Users will have access to their data from any workstation in the District Intranet.

- All classrooms will have a minimum of one networked multimedia capable computer.
- In the elementary grades K-6, all general classrooms, where requested, will have a cluster of 4 or 5 computers, and convenient access to a networked printer.
- Elementary schools will each have computer labs so teachers wishing to engage in activities requiring all students to use computers concurrently will have the required facilities.
- Each of these buildings will also have “mobile” labs consisting of laptops with wireless connectivity to provide additional settings for class wide computer access.
- Teachers will all have convenient access to computer workstations, and when requested, may have a laptop computer in lieu of a desktop unit in their classroom. Teachers may take these units home to work on school-related materials & activities.
- The High School will have Computer Labs to provide the necessary technology access for most student work. Some of these labs will be primarily used full time for teaching computer and technology related courses. These labs will have a mixture of workstations with platform and capabilities as appropriate for the curriculum objectives and software to be used. Print stations in the high school will be located in departmental offices, the media center and computer labs and lab carts.
- Library Media Centers in each building will be equipped with multiple workstations to provide access for student research and access to the on-line collection catalog. Workstations will also be provided for circulation management.
- Multiple mobile cart based laptop labs will be provided to increase the availability of technology access to teachers using technology activities in their courses.
- Additional clusters of desktop workstations or laptops will be provided for science and technology labs.
- Building and District offices will be provided with workstations for each of the administrators and staff.

B. Equipment and Service Components

1. Hardware/Software

- a. The district is committed to maintaining the existing student to computer ratio through replacement and redistribution of hardware. The district will replace older hardware based upon a guideline of replacing equipment after five years of use. The district is also committed to assessing new technology as it becomes available and adopting the use of this technology, as appropriate, based upon the needs of students or instructional programs. The district will

also supply software that supports instruction and provides for efficient operation of our schools. This software will be compatible with existing computer systems and will be upgraded as new releases become available or as needed to stay current with improvements in hardware capabilities.

- b. Since communication is critical to the successful integration of technology into teaching and learning, district telecommunications systems will be maintained in order to stay current with improvements in technology. Telecommunications systems will be designed and maintained in order to provide easy access by students, staff, parents, community members and all other stakeholders in order to improve communication and availability to information. The district will maintain telecommunications systems to ensure that connectivity standards are used to provide reliability, security, interoperability and scalability.
- c. The district will also utilize other technology-based equipment in the classroom in order to enhance instruction. This equipment includes, but is not limited to, digital television, LCD projectors, digital cameras & video recorders, web casting, scanners and DVD players/recorders.

2. Services

- a. Computer and Internet access will be provided in all schools. Computer access will include classroom computers, computer lab/classrooms, libraries and use of mobile computer labs (laptops). Internet access will be provided based upon parental approval and if age or grade level appropriate. Internet access (via BOCES) will be secured and security measures maintained in order to ensure compliance with the Children's Internet Protection Act (CIPA).
- b. Telecommunication services will be provided via BOCES and (or) outside vendors. The district will work with service providers to maintain high standards of reliability, security, interoperability and scalability.
- c. Other information services will be provided for by the district including administrative information systems (i.e. financial systems, student information systems, library systems, transportation systems, etc.) and online services such as the district web site. The district is also committed to provide instructional support services. Examples of current technology in this area include PowerSchool, First Class, and Blackboard.
- d. Technology based services will also be provided to enhance and promote parental communication. Services, software and systems such as Blackboard, the PowerSchool Student Information System, our web site, e-mail and phone systems will enable better communication with parents in order to provide information in a timely and expedient manner.

3. Infrastructure

a. Facilities Construction & Renovation

A building project is in the planning stages for 2007. This project will include upgrades to our technology infrastructure, if needed. Facility planning will also include a discussion on the use of wireless access throughout our buildings.

b. Telecommunications and Electrical Wiring

- The network wiring in the Burton St. building has been replaced with Cat-6 cabling. In addition, some classrooms, which had an inadequate number of drops, have had network connectivity added.
- Network switches, which are currently operating at 10MB, are being replaced with 1000MB/100MB/10MB managed switches to provide enhanced connectivity.
- The electrical wiring in the older parts of the building is being upgraded to meet the needs of multiple networked computers in all of the classrooms.
- The Ethernet fiber connection between the Green St. Complex and Burton St. has enhanced connectivity between the buildings and improved Internet access.
- In the 2007-2008 School year, a portion of the network switchgear should be replaced to provide 1000MB access at the desktop level on the High School labs to provide better connectivity for multimedia production.
- In the 2007-2008 timeframe, consideration will be made to upgrade the backbone to 10GB as aging switches are replaced with new equipment.

4. Related Support Programs

a. Upgrades and maintenance

Upgrades - In order to maintain the student, faculty and staff's ability to utilize technology effectively, we have a general plan to replace computer workstations on a 5-year basis. Part of this replacement plan normally involves replacing the computers in the building labs each year and reassigning the year-old machines from the lab to replace classroom units at the end of their useful life. This allows that new equipment and software is installed in an environment where staff will be available to help users cope more readily with problems that often arise with new equipment or software. It also insures that the labs, which generally have high & most varied usage, are equipped with the fastest, most capable equipment.

As the yearly equipment inventory is completed, plans for next year's replacement are made and accounted for in the budget.

Equipment less than 5 years old may be replaced and reassigned if the functionality required for the workstation renders the workstation ineffective. Generally the

replaced workstations will be reassigned to replace older units in a location where less robust capabilities are required, for example simple word processing.

Software will be upgraded as deemed necessary for the proper, effective functioning of the technology in meeting the goals of the curriculum. If additional new licenses of software are being purchased, older versions of the software may be installed in order to maintain consistency on workstations within buildings. Where appropriate, software maintenance agreements will be purchased for software that is updated frequently or where it is financially advantageous.

When possible, site or building licenses will be purchased in lieu of single licenses in order to get the best pricing on software.

Maintenance - Maintenance of equipment will be accomplished through a variety of methods.

- General Maintenance - General cleaning, dusting of the exterior of computers, printers, etc. is to be performed by teachers or custodial staff.
- District technicians will perform troubleshooting of operational problems. Software and (or) hardware problems may be repaired locally, if appropriate.
- Hardware repair beyond the capabilities of local staff will be sent to OCM BOCES for repair or, if a warranty exists, be sent to a dealer who will service the unit under warranty.
- The age of the equipment and the cost of repair should be considered before repairing out-of-warranty units.

b. Security and Privacy

Privacy & User Responsibilities - The District will follow procedures that ensure compliance with all Federal and State regulations, in particular CIPA, COOPA and FERPA.

The policies and procedures related to the use of Technology in the District are outlined in the Board Policy Manual. All students and staff also are provided with an Acceptable Use Policy and Agreement, which they must consent to and sign. A copy of that agreement is maintained as long as a student resides in each building. (See attachment). This agreement lists appropriate and inappropriate use of the technology as well as possible consequences of violating the agreement.

Individuals using computer technologies in the District should have no expectations of complete privacy. Documents created and stored on district equipment are subject to monitoring by authorized district personnel. E-mail messages are also subject to monitoring. Students using technology, particularly the Internet, should be monitored at all times by faculty or staff. Students are not allowed to use e-mail unless involved in a special project. In those cases, faculty or staff must monitor the e-mail.

Access to workstations is limited by software running on the administrative and instructional networks. Use of workstations is limited only to valid account holders. There are no “guest” user accounts.

Windows LDAP policies & permissions govern access to the workstations on the administrative network.

Further management is provided on the student & faculty workstations. Windows workstations are managed using Visual Case, which manages permissions to limit student access to hardware and software on workstations based on group assignments.

Similar management restrictions are provided on the Macintosh platform using OS X.4 Workgroup Manager.

Firewall Protection, Content Filtering - Access to the Internet is provided through OCM BOCES. They provide limited firewall protection at their interface with the Internet. Our portal to the Internet is protected with a SonicWall firewall appliance. This appliance provides firewall services as well as content filtering.

The firewall provides port blocking for most ports not required for authorized Internet service. We provide limited access to the District Intranet for maintenance by OCM BOCES and district personnel. We also allow access to Web services via the Firewall DMZ and to specific Mail and Applications servers (e.g. Library Catalog access).

The SonicWall Content Service provides content filtering. Site blocking definitions are updated weekly. Web based e-mail is blocked by the content filter.

Back Up - In order to ensure the safety and continuity of data stored on District computer systems, a data back up plan has been implemented. Daily back-up storage is at OCM BOCES.

- Administrative servers (PowerSchool, District data and financial servers are backed up on a daily basis with a two-week rotation. The daily back-up tapes are moved off-site for storage until they are recycled every two weeks. An archive copy of the data is made monthly and stored locally.
- Instructional student and faculty servers are backed up on a daily basis (to disk) and also backed up weekly (on tape). The tapes are used for a three-week rotation, and then recycled. Archives are made quarterly. Archives are stored off site.

5. Deployment Schedule – The timeline for implementation of this plan varies depending upon the area that is being addressed. The following is a general guideline to be used in order to review the progress of our technology plan.

Facilities Improvements including wiring and connectivity – by September 2007.

Hardware purchases and replacements – by July, 2007 (plan to be updated on an annual basis.)

Software purchases and upgrades – by July, 2007 (plan to be updated on an annual basis.)

Implementation of curriculum review, staff development & evaluation – starting with the 20007/08 school year and being completed by the end of the 2009/10 school year. Curriculum review is an ongoing process that occurs each year.

C. Staffing & Training

1. Technology Coordination

a. Instructional Technology Coordinator

This position is currently filled by a Teacher on Special Assignment and will include working within the classroom setting with teachers and students in helping to implement teaching strategies employing instructional technology as well as other non-teaching duties. The position *does not* include dissemination of AV media and equipment currently managed by building Library media Specialists.

The Instructional Technology Coordinator is also the High School Department Leader of the Instructional Technology Department and supervises the teachers and curriculum in that department.

The instructional Technology Coordinator is directly responsible to the Assistant Superintendent and is also responsible for coordinating his/her efforts with each of the building principals for the programs in their buildings.

The Instructional Technology Coordinator:

- Is a member of the District Instructional Technology Planning Committee. A progress report on the Technology plan will be presented by the Technology Coordinator to the Board of Education on an annual basis or as requested by the Board.
- Will maintain knowledge of current trends in use of instructional technology in schools. This includes availability and capabilities of computer hardware & software as well as other instructional technology hardware & software such as video disk, CD-ROM, video projection equipment etc. This may be accomplished in part by attending regional, statewide & national meetings related to Instructional Technology issues.
- Serve as a liaison between Cazenovia CSD and other districts, BOCES, other educational institutions as well as technology suppliers.
- Conduct awareness sessions for district staff to keep them abreast of availability of new instructional technologies.
- Help develop & implement a district wide in-service program to maintain staff competencies with instructional technologies. This may be accomplished through: formal in-service courses (both within and outside the district); informal

training sessions; and development of building peer support groups for the use of instructional technology.

- Work with staff members to help in implementing instructional activities employing instructional technologies within their classrooms.
- Will develop a budget for District Instructional Technology based on requests from district staff & administration as well as the District Long Range Technology Plan. Manage requisitions, bids, ordering, and distribution of instructional technology hardware and software.
- Will maintain an inventory of district instructional technology hardware and software.
- Will oversee the installation and maintenance of instructional and library automation hardware and networking throughout the district.
- Will supervise the activities of teaching aids and assistants with responsibilities relating to Computer Labs and Instructional Technology.
- Will supervise the activities of the technicians who maintain and operate the district technology infrastructure.
- Assist in the maintenance and operation of the districts network and equipment.

b. **Building Technology Committees**

The principal of each of the elementary buildings will appoint a Building Technology committee. This committee shall meet as necessary to:

- Act as a liaison between the Technology Coordinator and the District Technology Committee and the faculty and staff in their building.
- Evaluate the technology needs within the building and communicate these needs to the Technology Coordinator and the District Technology Committee.

c. **High School Department Leaders**

At the High School level, the Department leaders will act in the same role as the Elementary Building Technology Committees.

d. **District Technology committee**

This committee is responsible for the development and implementation of the district's Long-range Technology Plan. The committee will work in conjunction with all other district-wide planning committees (e.g. EAP, Shared Decision Making, EAC, etc.) to coordinate their efforts. The committee is comprised of:

- The Assistant Superintendent
- The Instructional Technology Coordinator.
- Two representatives of each building. These members will include a diversity of faculty and administrative staff. The members of the building technology committees will be represented in this body.

• This committee will meet monthly, or as often as deemed necessary.

Membership on this committee includes staff and administrators from each school building with a preference for people who also serve on the building level technology committees. Members also represent teachers from technology intensive content areas and library media specialists.

e. **Lab Teaching Assistants**

The Computer Lab Teaching Assistants will be the individuals in charge of the student use computer labs in each building. They will be responsible for the basic maintenance of the lab as well as:

- Assisting students in the use of technology
- Assists faculty and staff in the use of technology.
- Training staff in software & hardware use
- Assist staff in planning for technology integration
- Basic network account maintenance (managing student accounts, groups, passwords, etc.)
- Distribution of & installation of software via remote desktop.
- Basic first level troubleshooting of computers in the lab and the classrooms.

f. There is no current plan to utilize or collaborate with adult literacy service providers.

g. At the current time, public libraries will only be included in the planning and implementation on an as needed basis.

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A description of how LEA identifies and promotes strategies integrating technology effectively into curricula and instruction, based on a review of relevant research and leading to improvements in student academic achievements measured by challenging State standards

2. Curriculum Planning

Research consistently proves that teacher knowledge and ownership are critical factors in determining whether technology programs achieve their desired results. Teachers should not only be introduced to the technology, but also provided with models and guidance in how to effectively integrate technology resources into their instruction.

The improvement of teaching and learning is the single most important goal in our district's technology plan. Cazenovia Central School believes that introducing technology into our district creates a more effective learning environment and is an effective tool for assisting in the improvement student achievement.

Goal:

Teachers will use technology as an instructional tool to promote student learning and achievement in all of our areas of study.

Currently:

Cazenovia Central School's Curriculum Advisory Team has developed a curriculum improvement process;

- To articulate our K-12 curriculum.
- To coordinate our curriculum at the grade level.
- To align with the New York School Standards and Assessments.

In developing this curriculum process, a series of curriculum documents have been designed to ensure commonality. These documents include;

- curriculum guides
- curriculum maps
- unit maps
- standards-based learning units
- learning plan

Action Plan:

We believe that the integration of technology throughout all areas of the curriculum is a critical component of an engaged learning environment. Our curriculum documents provide the space for a tie between technology use and existing classroom instruction, but there is a need to ensure that all students are provided equal opportunity to use technology as a tool for learning.

1. Our district-wide technology committee will work closely with our Curriculum Coordinator and the district Curriculum Advisory Team to:
 - Have teachers provide curriculum ideas using technology.
 - Provide the technology skills needed to develop and share curriculum documents.
 - Use online programs such as, Blackboard and First Class to post curriculum and instructional documents electronically.
 - Demonstrate our commitment to using technology as an instructional, productivity, and communication tool.
2. Design and implement a process for monitoring and documenting staff participation in professional development activities. This process will provide the district with an understanding of the level of competencies and information needed to support our staff.

3. Teacher, Administrator & instructional support staff training

“Effective staff development focuses on the knowledge, skills, and attitudes required of teachers, administrators, and other school personnel so that all students may learn and perform at high levels.” (NSDC, 1997. *What is Staff Development Anyway?*)

Cazenovia Central School believes that is critical for all teachers to have the basic skills and knowledge to provide students with the opportunity to use technology as a tool for learning and communicating.

Goal:

The ultimate goal of our staff development process is to increase student achievement and provide the knowledge and skills to teachers in order to impact school improvement. Our district will continue to provide many staff development opportunities focusing on application specific skills, support/productivity tools, and more curricular integration training.

Currently:

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 A description of how the LEA will ensure ongoing, sustained professional development for teachers, administrators, and school library media personnel served by the LEA to further the use of technology in the classroom or library media center.

The district Professional Development Plan (see appendix II) includes the effective use of technology in the classroom. This will be accomplished in several ways. Our professional development process starts with new staff members participating in a three-day orientation to include technology training with current operating system software and classroom management tools. To stay current with the rapid change in technology and instructional models, our staff members participate in one to two staff development days each year and may participate in the following additional offerings:

- in-service courses
- conferences
- EAC Grants
- BOCES and other off-campus services
- individual support by expert colleagues

These opportunities ensure that our staff is continually trained and our topics are updated, evaluated, and renewed. All topics strive to match our curriculum goals and provide an instructional tie to the New York State Standards. However, many of these opportunities are elective thus, some staff are more technology literate than others.

Action Plan:

1. Focus on providing staff development, which help teachers' embrace technology by:
 - Teaching classroom strategies that focus on integrating the technology into their existing instructional plan.
 - Encouraging teachers to include technology activities into their curriculum planning and standards by initiating an annual evaluation process.
2. We will provide the necessary staff development to support staff with developing competencies with existing and new technologies to include:
 - Maintaining a working knowledge of the computer system.
 - Integrating technology into classroom instruction and communicating expectations to students.
 - Communicating and collaborating with colleagues.
 - Monitoring, analyzing, and adjusting instruction and student outcomes.
3. Based on the National Educational Technology Standards for Teachers, we will identify and implement district-wide technology benchmarks for all teachers.
4. Teachers will be evaluated (in accordance with the local teacher's contract) on a routine basis and the evaluation will include the appropriate and effective use of technology in the classroom. This evaluation will be performed by district and building level administrators who will also be instructed in evaluating the use of technology in the classroom.

National Educational Technology Standards for Teachers – All classroom teachers should be prepared to meet the following standards and performance indicators.

Technology Operations and concepts

Teachers demonstrate a sound understanding of technology operations and concepts.

Teachers:

- Demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Educational Technology Standards for Students).
- Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.

Planning and Designing Learning Environments and Experiences

Teacher's plan and design effective learning environments and experiences supported by technology. Teachers:

- Design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners.
- Apply current research on teaching and learning with technology when planning learning environments and experiences.
- Identify and locate technology resources and evaluate them for accuracy and suitability.
- Plan for the management of technology resources within the context of learning activities.
- Plan strategies to manage student learning in a technology-enhanced environment.

Teaching, Learning, and the Curriculum

Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning. Teachers:

- Facilitate technology-enhanced experiences that address content standards and student technology standards.
- Use technology to support learner-centered strategies that address the diverse needs of students.
- Apply technology to develop students' higher-order skills and creativity.
- Manage student learning activities in a technology-enhanced environment.

Assessment and Evaluation

Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies. Teachers:

- Apply technology in assessing student learning of subject matter using a variety of assessment techniques.
- Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
- Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

Productivity and Professional Practice

Teachers use technology to enhance their productivity and professional practice.

Teachers:

- Use technology resources to engage in ongoing professional development and lifelong learning.
- Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
- Apply technology to increase productivity.
- Use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

Social, Ethical, Legal, and Human Issues

Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK–12 schools and apply that understanding in practice. Teachers:

- Model and teach legal and ethical practice related to technology use.
- Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- Identify and use technology resources that affirm diversity.
- Promote safe and healthy use of technology resources.
- Facilitate equitable access to technology resources for all students.

5. Other resources – The district will utilize other resources as required. These resources include, but are not limited to, BOCES, teacher centers, and consultants.

5. Support & Maintenance

Technology Support & maintenance are provided by a number of individuals throughout the district.

The Technology Coordinator and two technicians provide primary support for the infrastructure, hardware and software within the District.

Technology Coordinator: This individual is the primary System Administrator on the Macintosh OS X Instructional Student and Faculty servers for the Green St Complex. This person is also the administrator of the District staff email and GroupWare Server. This person provides back-up install, deployment and maintenance roles.

Network Administrator & Network Technician: This individual maintains all administrative servers (e.g. District data, Student Information Systems and Finance Server). This person maintains the authentication server for the Administrative network maintains user accounts on the network. He/she also maintains the hardware for administrative network and all administrative workstations, to include installation, deployment and repair of the equipment & software. He/she provides

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A list of source(s) of ongoing training and technical assistance available to schools, teachers, and administrators in the LEA, such as NYSED, BOCES, Teacher Centers, NYSC&TE, regional educational centers or institutions of higher education.

A description of supporting resources (services, software, other electronically delivered learning materials, and print resources) to be acquired to ensure successful and effective uses of technology.

primary maintenance of the network hardware on the instructional network. This technician also provides software support for users of administrative workstations.

This individual also maintains the Win 2000 Server on the instructional network as well as managing student's accounts via Visual Casel. He/she also is the primary provider of installation, deployment and repair of Windows workstations.

Computer/Network Technician: The second technician is primarily responsible for installation, deployment and repair of Macintosh workstations in the three buildings. He/she is also the primary Server Administrator for Burton St. servers.

Both technicians are cross-trained to provide for backup when the primary support person isn't available.

Computer Lab Teaching Assistants: These individuals provide primary software support to teaching staff & students in each of the buildings. They monitor student use of computers and in many cases assist in teaching students the use of various software packages. They also are responsible for basic maintenance (dusting, cleaning) of hardware in the lab and are involved in the management of student workgroups and software access on workstations in each of the buildings.

Technology Integration Specialist: Currently, no position exists. However, the technology committee recommends that the district consider such a position in the future. This position would require a certified teacher & technology specialist who would work in each of the buildings to help teaching staff plan for and implement technology integration within their respective curricula.

Webmaster: The District webmaster is responsible for maintaining the District web site. This person works with the technology coordinator and the District Administration to ensure that appropriate District Information and Technology resources are provided to users visiting the District web site.

OCM BOCES: BOCES provides support for us in several ways.

- Repair and warranty service for Apple, Dell, & HP hardware. This service is provided off site at the Thompson Road BOCES center.
- Network & Internet connectivity is provided through an OC3 connection to the BOCES center and via fiber connection to the Internet. BOCES also provides help desk & equipment maintenance support for this connectivity.
- VOIP service within the BOCES network region.
- Staff training through the Center for Learning Technologies.
- Blackboard training & support.
- Support for PowerSchool, in particular for integration of data with OCM BOCES.
- Support for BOCES subscribed services (e.g. Bridges CX).

Help Desk Support:

We purchase telephone/remote support services from several vendors:

- Financial Management Software Support - Infinite Vision, Inc.
- Extended HelpDesk Hardware & Software Support from Apple Computer
- Software support for Visual Casel from CPSI, Inc.
- Software support for PowerSchool by OCM BOCES.

III. Plan Administration and Budgeting

A. Current plan approval status:

1. The district-wide technology plan is reviewed internally by the district-wide technology committee and the Board of Education. The district-wide technology committee consists of administrators and instructional staff who creates the district's technology plan based upon input from district personnel and community members. The Board of Education will review our district-wide plan, recommend changes and approve the plan.
2. The technology plan will also be reviewed, independently, by the OCM BOCES and other governmental agencies to ensure compliance with regulations including, but not limited to, NCLB, E-rate, CIPA, etc.

B. Budgeting (see appendix III)

1. Purchases of equipment, software and related services will be budgeted on an annual basis. Purchases will be made in order to maintain existing levels of service and to keep current with advances in technology. A detailed listing of expected purchases is attached.
2. The annual school budget contains \$702,213 (2007/08) designated for computer-aided instruction and \$41,250 for the maintenance of existing district-wide information systems. This amount includes salaries for technical support, purchase of hardware & software, training & professional development, and supplies. An additional \$51,420 is budgeted for audio-visual equipment and services. The district operation & maintenance budget also has funding allocated for the ongoing cost and maintenance of telecommunications technology and equipment. Departmental budgets may also include budgetary appropriations for technology-based equipment for use in the special education, math, science and CTE departments. The district technology coordinator, based upon input from department leaders and building principals, develops the annual budget. The budget is then reviewed by the Assistant Superintendent and Superintendent. The budget must then be adopted by the Board of Education. Final approval of the budget is by qualified

voters of the school district at the annual budget vote scheduled for the third Tuesday in May.

3. The district is committed to maintaining or upgrading the technology infrastructure based upon improvements to existing technology. Improvements to the technology infrastructure, which require significant cost outlays, will be included in the district's long-range facilities plan and the cost of these capital improvements will be covered by borrowed funds.
4. The district will also make use of funding sources such as BOCES Aid, Hardware Aid, Building Aid (on capital projects) and tax levy increases. E-rate discounts will also be taken when available. The district will also apply for grant opportunities, as they become available. Over the past several years the district has applied for and received technology grants (i.e. Project Lead the Way).

IV. Information Technology Assessment

A. Current Inventory of Equipment and Services

1. Hardware - At Cazenovia, classrooms in all three buildings have a minimum of one Internet capable computer. These desktops are a mixture of iMacs or eMacs workstations. In the Elementary School and Middle School, most classrooms also have clusters of 4 or 5 Macintosh computers and a printer (inkjet or Laser printer) per room. Furthermore, 133 teachers have been assigned an iBook laptop, which they use in their classrooms as well as at home for class preparation. All but 3 of the 800+computers in the district are network and Internet capable. All of the Macintosh computers have CD-ROM and are multimedia capable. Many of the newer units have CD-R or DVD-R drives.

Burton St. Elementary has a computer lab with 30 Macintosh eMacs. The lab also has a monochrome laser printer and color laser printer. There is also a cart with a laptop and LCD projector, which can be brought to classrooms for class presentations.

The Middle school has a lab of 30 eMacs with monochrome and color laser printers and LCD projector for class presentations. This building also has two iBook wireless carts with 12 computers each, which can be used as a mobile lab in classrooms, as well as a presentation cart with laptop & LCD projector. A cart with 6 wireless iBooks and a LCD projector are located in the 7th grade science Classroom.

The High School has 6 computer labs and 3 mobile labs. One lab, used predominantly for use by class groups of students, has 26 eMacs or iMac G4s and 4 Win 2000 workstations, a high capacity monochrome laser printer and

LCD projection system. When not used by classes, individual students who need computer access for schoolwork use it. The lab next door, which is used for teaching computer & computer graphics classes, has a mix of 28 eMacs, iMac G4, or Mac G4 units, a monochrome laser printer with 11x17 capability, a Xerox color solid ink printer and a Epson pigment inkjet printer with 24" High Quality printing capability. Another adjacent lab, used for Business classes, has 25 Dell Windows 2000 workstations and a high capacity laser printer. The technology department has a CAD lab with 21 Dell Windows 2000 Workstations and a monochrome graphics laser printer as well as a wide format DesignJet color inkjet printer. They also have a Wireless laptop cart with 20 Windows 2000 units, which are used as needed in any of the technology labs. The technology labs also have a mixture of 3-8 Windows and Mac desktop workstations. The science department has two (2) carts with wireless iBook laptops used for data acquisition and analysis in the science labs. The physics lab also has six (6) iMac desktop units permanently located on the lab tables for the same purpose.

The Library Media Centers in each building have workstations for library materials management and multiple Macintosh OPAC/Research workstations for student use. The building & district offices have Windows XP workstations for secretaries, counselors, nurses, clerks, principals & district personnel.

Each of the building has a mixture of multimedia peripherals including flatbed scanners, digital still cameras, digital video cameras, film scanners, and graphics tablets.

There are four server rooms in the district, one in the High School and Middle school and two in Burton St. The Burton Street Instructional server room has 4 Macintosh G3 or G4 server units. One is used for authentication; one runs the Library automation software, one stores student's home directories and the last one serves applications and stores software. The communications room in Burton Street houses a Novell domain controller a server for the building Student Information System and local share points. The Middle school houses the administrative server room. This room contains a number of servers supporting general authentication, student information systems, financial systems, document storage & retrieval, administrative email and general support functions (DHCP, DNS, etc). These servers run Novell NetWare, Windows 2000 server, or Linux. The High School server room houses the servers for instructional use in the High and Middle schools. It includes Macintosh FirstClass Mail server, XServe Authentication & HS home directory server and XServes for Middle School and Faculty/Staff home directories. There are also Macintosh servers for netboot and image restoration, an application server, a FileMaker Pro Database server and the District Web Server. There is also a Dell Windows 2000 server for authentication and home directories for Wintel workstations.

The servers for the Middle and High School library automation systems are located in their respective library offices.

User security on the Macintosh workstations is through OS X 10.4 Server and Workgroup Manager. Students store all files on their network sharepoint, which is mounted upon logon. Student files are accessible from any workstation in the district. Windows security is managed using Active Directory via Visual CaseL. Student access to applications & features are restricted by these applications. Faculty & Administrators also store files on network sharepoints except those with laptops, who have access to their local drives for storage for use when not on-line.

Back-Up of administrative servers is on DLT drives via Dantz Retrospect. Files from Burton St are copied via the network to local servers and backed up there. File backup on the instructional servers is via DAT Tape units, VXA Tape Drives or to daily backups to hard drives. Administrative backups are rotated off site daily.

A complete inventory of each of the rooms and the equipment located in the room is attached at the end of this section.

Software - When possible the District purchases District or volume licensing of software. Where appropriate network delivered instructional applications is preferred. An inventory of Software Licenses and multiple copy titles is attached at the end of this section.

2. Telecommunications

All buildings are equipped with telecommunications systems. The existing phone systems are approximately 1 year old in the elementary building and 10 years old in the Middle and High Schools. The existing systems reach every classroom and include voice message capabilities. The system in the elementary building has been recently upgraded.

3. Services

- a. Internet Services are provided through the Central New York Regional Informational Center at OCM BOCES. Cazenovia has an OC 3 Fiber connection to OCM BOCES who provides us with an Ethernet fiber connection to the Internet. We provide firewall and content filtering via a local Sonic Wall device. Burton Street elementary school, which is located 3 miles away, is connected through an OC3 connection.

Network diagrams are provided at the end of this section.

- b. Telecommunications services are district owned. In addition, OCM BOCES does provide voice interconnect services.

4. Other Technologies

Blackboard - Cazenovia is provided with several services through the OCM BOCES. One of these services is Blackboard. Blackboard is being used to provide instructional support to students via the web. This service is available to students in school as well as at home. Blackboard enables teachers to post homework assignments, notes, class materials, sample tests and projects for student and parent access from their home computer.

Email - We provide our own email services through one of two systems. The district's main email services are provided via a FirstClass Server. This system not only provides SMTP; POP & IMAP mail service for faculty and staff, but also provides web mail, calendar, web pages, and conferencing. It also provides the ability to post information to the web, which is accessible to students, parents and district residents (general announcements, sports schedules, etc.). A Novell GroupWise server is also user to provide email accounts for administrators and support staff. This second system will be phased out in the next year and migrated to the FirstClass system. In the High School, the primary means of communication with faculty and staff is via email. Use of email at the elementary and middle school varies widely.

College/Career Planning - High School and Middle School students have access to Career planning information via two products, Bridges CX and College View. These services are provided through the Internet. Bridges provides general career information as well as college information, whereas College view is aimed at High School students searching for colleges. Bridges is provided via BOCES.

Library Automation - Library Automation in the School is provided via Alexandria Software from Companion Corporation. The system is housed on three Macintosh eMac OS X Servers. These servers house the databases, which are interconnected and accessible by students and the community through the Internet and a web browser interface. Links to the collection appear on our web site.

Web Site - We host and manage our own web site locally. Our web master is a staff member who is paid on a per-hour basis to make modifications to the content of the web site as needed. Links on the web site also point to locations, which can be managed by other individuals (First Class or Blackboard). The web site provides information about the District, school activities, sports, job opportunities, programs, and student achievement. The site also provides web links, which students can easily access for use in their instructional programs.

Distance Learning – The district does not have a distance learning room. However, the district does make available resources and technology in order to allow teachers to provide virtual or Internet field trips for their students.

Student Information Services - Currently Cazenovia Central uses PowerSchool as its Student Information System. We have used PowerSchool since 2005, and software use includes demographics, grade book, mark reporting, and daily & period-by-period attendance. PowerSchool is a web-based software system.

Financial System – The district operates software (Unifund) to provide financial services including payroll, financial reporting, accounts payable, accounts receivable & billing, purchasing and all other required financial services.

Special Ed/IEP System – The district also utilizes software (IEP Direct) to track and report students with special needs. This system is used by administrators and teachers in order to establish individual education plans, set goals and monitor progress towards meeting these goals.

Transportation & Facilities – Software (Transfinder) is used to create a database of students in order to determine transportation needs and to establish bus routes. District owned software is also used to track maintenance requests and the use of facilities for school related activities and also by outside community groups.

Other - Administrators, faculty and staff use a locally developed FileMaker database application available via a web browser to submit & query Technology work orders. The Instructional Technology department is using this system to schedule and track work, equipment repairs, and service performance. A similar system is being developed for the Building & Grounds Department and will be implemented in the near future.

5. Infrastructure

The network infrastructure at Cazenovia is relatively robust, particularly at the High and Middle Schools. A building project that is to be completed by this fall will address the inadequacies in the Burton St. building.

Our connection to the world is through a Cisco Layer 3 switch, which is connected to the Central New York Regional Information Center of OCM BOCES via a fiber link.

The Nortel box is connected to a Sonic Wall device, which provides firewall protection and content filtering. Our Web server is attached to the DMZ on this device. The LAN connection is connected to a 24 port Gigabit switch that distributed the connection to a router, which connects to Burton St via a fiber connection and the administrative domain. This switch also distributes the connections via a fiber backbone to the 8 wiring closets & server rooms in the Green St. Complex. The closets contain 10/100/1000 MB switches, which distribute the connections to the desktop or cluster 10/100 switches. The main

server room contains a Gigabit 12 port switch through which is attached the servers. The Administrative server room is attached via a 1GB connection and distributes its services through 1GB connections. All cabling in the Green St. Complex Category 5(except two connections between the server room and main closet, which are Cat 6), Switches in this location are from Asante or Dell.

Several locations in the High School and Middle school have wireless 802.11b/g access points for use by laptops. Some of these are attached to the mobile carts; the others are mounted permanently. All instructional spaces in the Green St. Complex have network/internet access.

The Burton St. building is currently wired with Cat 6 Ethernet. The wiring closets are connected with Cat 5 and Cat 6 cables connect the main wiring closet with the instructional server room and computer lab. The router attached to the fiber distributes its connections via a 10/100 switch to the main wiring closet. The main closet has 2 - 10/100/1000 switches, which connect to the computer lab and server, closet at 1 Gigabit. The two other wiring closets are connected to the main closet at 1GB. Distribution to the classrooms is at 100MB. The administrative workstations are connected via Cat 6 and attach to the server and the network via a 10/100 switch. All switches/hubs in Burton St are from Asante (10/100/1000) or Dell networks (older 10MB units).

Network wiring diagrams are attached at the end of this section.

Cazenovia Technology Budget

Budget Summary - Revised June 2007

Item	2007-2008	2008-2009	2009-2010	2010-2011
Hardware	\$ 210,177	\$ 215,000	\$ 215,000	\$ 215,000
Software	\$ 66,650	\$ 70,000	\$ 70,000	\$ 70,000
Connectivity (BOCES)				
TLC (Coser 601) WAN Circuit	\$ 45,500	\$ 47,320	\$ 49,213	\$ 51,181
TIC (Coser 602-02) Local Tele	\$ 8,500	\$ 8,840	\$ 9,194	\$ 9,561
TIC (Coser 602-03) Long Distance Tele	\$ 2,000	\$ 2,080	\$ 2,163	\$ 2,250
INT (Coser 620) Internet Services	\$ 25,722	\$ 26,751	\$ 27,821	\$ 28,934
NCL (Coser 620) Network Connection	\$ 23,646	\$ 24,592	\$ 25,576	\$ 26,599
Furniture	\$ 3,000	\$ 3,000	\$ 3,000	\$ 3,000
Personnel	\$ 243,216	\$ 252,945	\$ 263,062	\$ 273,585
Staff Development (BOCES)	\$ 35,302	\$ 36,714	\$ 38,183	\$ 39,710
Staff Development (District)*	\$ 61,125	\$ 63,570	\$ 66,113	\$ 68,757
Lease/Purchase/Lic agreements	\$ 12,750	\$ 12,750	\$ 12,750	\$ 12,750
Information Services	\$ -	\$ -	\$ -	\$ -
Repairs	\$ 6,200	\$ 6,500	\$ 7,000	\$ 7,500
Consumable Supplies	\$ 13,250	\$ 14,000	\$ 15,000	\$ 16,000
Other Contractual Expenses	\$ 6,300	\$ 6,500	\$ 7,000	\$ 7,500
Total	\$ 763,338	\$ 790,561	\$ 811,074	\$ 832,327

* District Staff Development cost is budgeted under in-service training.

2007–2008 Instructional Computing Budget

Computer Assisted Instruction		2007–2008 Budget	2008–2009 Prop.Budget	2009–2010 Prop.Budget
Furniture, New	A 2630.204.000	\$3000.00	\$3100.00	\$3200.00
Computer Hardware/New	A 2630.220.000	\$0.00	\$11600.00	\$5000.00
Computer Hardware/Replacement**	A 2630.221.000	\$187677.00	\$194000.00	\$199000.00
Computer Hardware/Other	A 2630.222.000			
Contractual	A 2630.400.000	\$2500.00	\$2600.00	\$2700.00
Periodicals	A 2630.402.000	\$300.00	\$350.00	\$350.00
Fees/Dues	A 2630.406.000	\$500.00	\$525.00	\$550.00
Conferences/Training	A 2630.410.000	\$5000.00	\$5150.00	\$5300.00
Repairs	A 2630.412.000	\$8000.00	\$8500.00	\$9000.00
Outside Contractors	A 2630.415.000	\$1200.00	\$1250.00	\$1300.00
Licenses (OnLine Contracted Licensing Non-BOCES e.g. Filte	A 2630.429.000	\$12750.00	\$13150.00	\$13500.00
Textbooks	A 2630.480.000	\$500.00	\$600.00	\$700.00
BOCES Services (Instructional Technology)	A 2630.492.000	\$10536.00	\$10957.44	\$11395.74
Training, Software, Blackboard, Bridges – CLT 562				
BOCES Services (Basic Telecommunications eRate eligible)	A 2630.494.000	\$24766.00	\$25756.64	\$26786.91
OC3 from BOCES to HS – TLC 601				
BOCES Services (Administration)[Connectivity – eRate eligibl	A 2630.499.000	\$105368.00	\$109582.72	\$113966.03
e (Technicians, Hardware leasing & maint, Supplies) – TIS 620				
Telecom Network Line cost (HS to BS) – NCL 620				
Internet Services – INT 620				
Supplies	A 2630.550.000	\$13250.00	\$13650.00	\$14100.00
Computer Software	A 2630.566.000	\$66650.00	\$68650.00	\$70700.00
	Non-BOCES	\$301327.00	\$323125.00	\$325400.00
	BOCES	\$140670.00	\$146296.80	\$152148.67
Total		\$441997.00	\$469421.80	\$477548.67