

Chapel Hill Public Library
Information Technology Plan
2003 - 2007

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I. Summary

This plan presents library technology recommendations for the Chapel Hill Public Library for 2003 to 2007. The plan focuses on the future development of the Library's electronic resources and services. It also addresses development of the technology infrastructure required to provide these resources and services.

Report recommendations are summarized below. Each report recommendation includes one or more projects, with accompanying implementation schedules and costs. The project implementation schedule is intended to be used as a blueprint for technology-related projects and purchases for the next five years.

Projects are intended to correct current technology deficiencies identified in the Library's *Library Needs Assessment Task Force Report* (1999) and its recently completed *Five Year Services Plan: 2001-2006 and Long-Term Facilities Needs Through 2020* (2001). This consultant agrees with the technology assessments in those two documents. The projects are also intended to create an up-to-date information technology environment for Chapel Hill Public Library patrons by the year 2007.

The library technology environment is not satisfactory. It must be upgraded to provide modern products and services for the citizens of Chapel Hill.

Recommendations have been broken out into seven areas:

Automation system development

Recommendations include:

1. *Upgrade the automation system to improve library services for patrons.*
2. *Replace text-based terminals with computers in public and staff areas to deliver enhanced products and services to library patrons.*

Streamlined service

Recommendations include:

1. *Install a radio frequency identification system (RFID) to simplify the materials management process, allowing patrons to do self-checkout and improving staff workflow and processes.*

Electronic reference service

Recommendations include:

1. *Provide reference services that patrons can use from remote sites.*
2. *Develop and maintain the library's website to meet current information needs.*
3. *Promote patrons' awareness of NC Live databases.*

Public access computing

Recommendations include:

1. *Provide 28 public Internet computers as recommended by North Carolina Public Library Association guidelines.*

2. *Upgrade software and equipment based upon the Town of Chapel Hill Information Technology Department's plan for replacement.*
3. *Ensure a safe Internet browsing experience for children.*
4. *Install a PC management system to efficiently control the flow of patron traffic to public Internet computers.*
5. *Conduct an annual review of library electronic products and services as part of the Town of Chapel Hill's CIP development process.*

Patron training / staff training

Recommendations include:

1. *Provide staff with appropriate technical skills to satisfactorily perform their jobs and to serve the public.*
2. *Sponsor training opportunities for patrons to improve their information seeking skills.*
3. *Provide self-study training materials to patrons and staff to improve their information seeking skills.*

Infrastructure development

Recommendations include:

1. *Secure the Library's network to prevent disruptions of service.*
2. *Improve the Library's wiring infrastructure, including the use of wireless networking, to modernize electronic products and services.*
3. *Provide appropriate equipment to systems personnel to effectively maintain the Library's technology environment.*
4. *Develop a technology disaster plan to ensure the recovery of essential computerized library products and services in the event of a disaster.*

Human resource considerations

Recommendations include:

1. *Provide adequate systems staff to develop and support the Library's emerging products and services.*

Hiring systems staff is a critical recommendation provided in this plan. Without adequate systems staff, the recommendations and projects in this plan will be delayed or will not happen at all.

My thanks to the Library Board, members of the Chapel Hill Technology Committee and Town staff for the information and time generously provided to this consultant while preparing this report. The Town's recently adopted *Five Year Services Plan* (2001) as well as the *Library Needs Assessment Task Force Report* (1999) also provided important background information.

A glossary is provided in Appendix A to help the reader to understand unfamiliar technical terms.

II. Technology Service Trends in Libraries

A visit to a public library in the year 2002 or 2003 is very different from a visit to a public library in the year 1990. Today public libraries are highly automated and provide numerous electronic resources and services to the public. In 1990; most libraries had card catalogs and few, if any, computerized products and services.

Important technology service trends in public libraries include:

- Access to a growing number of library products and services **from a patron's home or office** (this is the concept of a library without walls.)
- Availability of **new searching tools** that can simultaneously search a variety of local and remote resources to find the appropriate information for patrons.
- **Connection to the Library's network** with a patron's portable device such as a PDA or laptop using wireless connectivity.
- **Self-checkout** to improve the efficiency and use of patron and staff time.
- **Training** and information on the most current and efficient search tools and techniques.
- Availability of **public Internet computers** with a growing complement of peripherals (e.g., color printers, CD/DVD-RW, scanners) in sufficient number to minimize queuing.
- **In-house technical staff** to support the increasingly automated access to information.
- Web-based **surveys** to identify patron interests and to refine library services.

III. The Chapel Hill Public Library Environment

The Town of Chapel Hill

The Town of Chapel Hill is located in Orange and Durham Counties in north central North Carolina and has a population of approximately 51,598. The population has grown about 2.3 percent per annum during the last decade. The 15-29 age group accounts for nearly 50 percent of the town's population.

Chapel Hill is home to the nation's oldest public university, The University of North Carolina at Chapel Hill. According to the 2000 census, 27 percent of Orange County's population has earned a graduate or professional degree.

In 2002 the median family income in Chapel Hill was 166 percent of the United States median income. The average price of homes sold in Chapel Hill was approximately \$278,000 in 2001.

The Chapel Hill Public Library

The Chapel Hill Public Library is a department of the Town and is governed by the Mayor and Town Council. The Library is in an eight-year-old, 27,315 square-foot building with an open floor plan on one-and-a-half floors.

The Library serves residents of the Town of Chapel Hill and Southern Orange County. The estimated population that the Library will serve in 2007 is 71,235 (estimated for planning purposes). See Appendix C for an explanation of this population estimate.

Library services include:

- Lending materials to the public
- Providing access to the online catalog and remote databases
- Researching the public's questions
- Assisting students in doing their homework
- Presenting programs for children

The Library has 26,600 patrons who made 236,000 library visits from 2001 to 2002. The library collection contains approximately 140,000 items. Patrons borrowed approximately 755,080 books and other materials from 2001 to 2002.

The Library has a long history of lending more books per resident than any other public library in the state. It also was ranked first in the state by the Hennen's American Public Library Rating Index, for the patrons' very active use of its traditional library services.

The *Five Year Services Plan* that the Town Council adopted in 2002 includes a mission statement that is particularly relevant to this information technology plan:

*"The Chapel Hill Public Library, in recognition of the high service demands of a varied community of users, seeks to aid the individual's pursuit of self-education and research, pleasure, and the creative use of leisure time, **while employing the most efficient library technology available...**"*

The Library's Current Technology Environment - Overview

Although the Library leads North Carolina public libraries in traditional library services, the *Five Year Services Plan* states that the current technology environment is inadequate. The Library has a total of 32 computers, including two laptops. Of this total, nine computers are available for direct public Internet access; four are used for mediated searches in which staff assist patrons. The remaining 19 computers are used for staff functions such as reference, technical services, and administration.

Library staff computers are included in a three-year replacement cycle adopted by the Town Council and maintained by the Chapel Hill Information Technology Department.

(See Appendix D for more details on the Library's technology inventory.) However, public access computers for Internet use are not currently on this replacement cycle.

The Library contracts with Innovative Interfaces, Inc., a well-established automation vendor, to provide its integrated library system (ILS). The Library owns Innovative's 12-year-old automation system, Innopac. It runs basic library functions such as cataloging, circulation, and the Library's online public access catalog (OPAC). Innopac also runs more advanced functions, such as telephone notification of overdue items and a Web-based catalog. Thirty-eight terminals provide only text-based access to the Innopac system for patrons and staff.

Approximately three years ago, Innovative began to deliver a new system - Millennium - to replace Innopac and to provide greater functionality. Innovative continues to support their Innopac product, but they are no longer making improvements to it.

Most of the Library's current wiring was installed in 1994 to support text-based terminals, which are now obsolete. Some wiring installed since 1994 is Category 5 and will support networked computers.

The Town's Internet connectivity for the Library and other Town departments is currently provided by Time Warner's Road Runner Business Class service. Internet security for the staff computers is provided by the Town's Internet Security and Acceleration (ISA) server. Internet response time is acceptable at this point in time. The Library will need to monitor Internet response time with the Town Information Technology Department as the number of its Internet-connected computers grows.

IV. Library Technology Recommendations for 2003 - 2007

Introduction to Recommendations

Technology recommendations for 2003 through 2007 are described in the following seven sections:

- A. Automation system development
- B. Streamlined service
- C. Electronic reference service
- D. Public access computing
- E. Patron training / staff training
- F. Infrastructure development
- G. Human resource considerations

Background information is provided for each technology area and includes:

- A summary of the current service level at the Chapel Hill Public Library
- Exemplary practice ideas and examples from comparable libraries and other organizations
- Development ideas to improve the service

Recommendations and related projects are grouped by technology area and include implementation schedules and costs.

Estimated cost data has been obtained from The State of North Carolina Department of Administration registered vendors, government procurement specialists, and individual vendors. Estimated cost data is in current dollars and do not include library staff time. When planning a specific project, project team members should first obtain current pricing, evaluate competing products, and negotiate best prices.

Projects have been timed for implementation over the 2003 to 2007 fiscal years. After library systems staff is hired, the timeline should be re-evaluated based on current staff and available budget.

A. Automation System Development

This section addresses issues associated with:

1. *Upgrading the automation system to improve library services for patrons.*
2. *Replacing text-based terminals with computers in public and staff areas to deliver enhanced products and services to library patrons.*

Current Service Level at the Chapel Hill Public Library

The Chapel Hill Public Library has the Innopac integrated library system (ILS) from Innovative Interfaces, Inc. The Innovative system includes modules for cataloging, circulation, online searching, acquisitions, serials control, telephone notification, and Web access. Innovative is recognized as one of the best ILS vendors in the market. The Innopac system has provided satisfactory service to the Chapel Hill Public Library. Although Innovative still supports the Innopac system, new features are no longer added.

There are currently 38 text-based terminals used in public and staff areas to provide access to the Innopac system. These terminals are only able to display character-based information, not graphical information. The text-based terminals require special network equipment – terminal servers – to interact with servers.

Exemplary Practices

Library automation system implementations that are noteworthy might include the following features:

- Graphical user interface to help staff and patrons navigate the system
- Catalog enhancements, such as the table of contents for the library's books
- Searching capability across a variety of resources (e.g., Web resources, other library catalogs, full-text databases) to match patrons with the information that they seek
- Information empowerment for system users (e.g., patrons can place holds, checkout and renew materials, and maintain their patron record)

Two of Innovative's featured libraries demonstrate some of these advanced functions. See The Rodman Public Library in Alliance, Ohio at <http://www.rodmanlibrary.com/> and The Fort Collins Public Library at <http://www.fcgov.com/owl>.

Development Ideas for the Chapel Hill Public Library

Importance of an Integrated Library System (ILS): An ILS provides functions for both public and staff use and is a basic building block of a modern automated library. The ILS helps patrons by allowing them to search the library's collection from within the Library or from a remote location. The ILS helps staff by providing a single integrated system to help manage the collection. For example, the ILS provides an easy method for the cataloging and circulation of library materials.

The ILS market is very active and is expanding to integrate Web resources with online catalogs. New products and modules are continuously developed to take advantage of new needs, technologies, and trends. The Library should continuously monitor other vendor's products to ensure that they have the best product for the community.

Migrating to an Improved System: Innovative has recently introduced a major new ILS upgrade called Millennium. The Millennium package includes a number of new modules that could improve staff workflow and service to the public. One example is Millennium Access Plus (MAP) - a module that controls and allows access to diverse remote databases. MAP includes three components – WebBridge, MetaFind, and Web Access Management. WebBridge offers smart linking in order to access full-text journals, e-books, or other resources. MetaFind can search heterogeneous information resources such as citation databases, websites, library catalogs, Z39.50 databases, and local digital collections. Web Access Management provides patron authentication to remote subscription databases.

Important Additional Modules: Several other ILS modules would help improve service to patrons at this time:

- *Web OPAC Unlimited License* - The Library already has Web OPAC but needs an unlimited user license. This would allow an unlimited number of users to view the library's catalog simultaneously.
- *Patron API* - This module allows sharing of patron information with an external system such as CybraryN. CybraryN could allow each patron to log in to a public Internet computer.
- *SIP2 Circulation Interface* - Allows check-in, check-out, renewal, and item status inquiry via Standard Interchange Protocol Version 2 via connected self-service stations. Essentially, this interface will allow patrons to become more self-sufficient.
- *Table of Contents Display and Indexing* - Allows the display of table of contents information for books.
- *KidsOnline* - A Web OPAC interface designed for use by children. It is simpler and easier to use than the adult OPAC.
- *Circulation Notices via Electronic Mail* - Provides the ability to send all types of circulation notices via email thereby saving on mailing costs and reducing delivery time. Patrons can receive hold and overdue notices sooner.
- *Web OPAC User Interface Languages* - Allows patron viewing of the OPAC in Spanish, Chinese, and other languages as selected.
- *URL Checker* - Verifies URLs that act as pointers in the catalog. This ensures that patrons have access to working Web resources.
- *Powerwatch Software* - Software that monitors the connection between the uninterruptible power supply (UPS) and the Innovative CPU. In the event of an extended power failure, Powerwatch would gracefully power down the server.

Upgrading ILS Access: Most of the access to the Integrated Library System is from text-based terminals. Text-based terminals are limited to character-based interactions with servers that are specially equipped to communicate with them. As new electronic products and services are implemented, text-based terminals will need to be replaced by computers. Text-based terminals are based upon old technology and are rarely used with new products.

As text-based terminals are replaced by computers, associated electrical power implications should be considered. Computers might put more strain on existing library electrical circuits than text-based terminals. Each computer should be connected to a good quality surge suppression device.

Automation System Development - Recommendations / Projects

Recommendation A1: Upgrade the automation system to improve library services for patrons.

Projects		Target Completion Date	Cost Data
1	Purchase an unlimited Web OPAC license.	January 2004	\$223,137 ^{*1}
2	Migrate the Innopac system to Innovative's newer system – Millennium. This upgrade includes a server upgrade.	June 2004	^{*1}
3	Evaluate and implement additional Millennium modules that would enhance service to patrons: a) Table of Contents Display and Indexing b) KidsOnline c) Web OPAC User Interface - other languages - Spanish and Chinese d) Millennium Access Plus (MAP)	January 2005	^{*1}
4	Evaluate and implement additional Millennium modules that would improve staff workflow and processes: a) Patron API b) SIP2 Circulation Interface c) Circulation Notices via Email c) URL Checker	June 2005	^{*1}

^{*1} This includes Millennium Web Management Reports, Millennium Circulation, Millennium Serials, Millennium Acquisitions, Millennium Cataloging / Database Management, Advanced Keyword Searching, Alphabetic Sort of Locations, Location Synchronization, Onsite training, Indexing Expansion & Display; and Unlimited data license. It also includes a server upgrade to an Alpha DS10 with RAID5, Powerwatch software, and associated peripherals. Additional software modules that are included are Patron API, SIP2, TOC Indexing & Display, KidsOnline, Circulation Notices Via E-mail, Spanish Web OPAC menus, Chinese OPAC menus, Web Access Management (includes URL Checker), WebBridge, and MetaFind. It also includes an unlimited WebOPAC User license. The subtotal of \$170,743 is paid over two fiscal years and includes a \$52,414 Millennium upgrade discount. Add \$11,700 for INN-View Service for Blackwell's TOC Records for three fiscal years. Add \$38,850 for the initial load of TOC records and the ongoing load of TOC records over three fiscal years. Add \$1,844 for the additional maintenance on new software modules over two fiscal years.

Recommendation A2: Replace text-based terminals with computers in public and staff areas to deliver enhanced products and services to library patrons.

Projects		Target Completion Date	Cost Data
1	Evaluate and develop a detailed plan for the replacement of text-based terminals with computers	June 2003	
2	Replace one-third of text-based terminals with computers	June 2004	\$18,141 ^{*1}
3	Replace one-third of text-based terminals with computers	January 2005	\$17,513 ^{*1}
4	Replace one-third of text-based terminals with computers	June 2005	\$17,513 ^{*1}
^{*1} Cost based upon the replacement of 38 text-based terminals divided into groups of 13, 13, and 12. Based upon Dell OptiPlex GX260 minitower 2.53 GHz with 256MB SDRAM from the Dell North Carolina Store at \$1,347 each which includes Microsoft software. 22 of the 38 computers will be placed in public areas as OPAC computers. Add the cost for Centurion Guard devices at \$90 each in groups of seven, seven, and eight for the 22 OPAC computers.			

Automation System Development - Estimated Budget

Item	Unit Cost	Qty	2002-2003	Qty	2003-2004	Qty	2004-2005	Qty	2005-2006	Qty	2006-2007	Total
A1 Unlimited user license upgrade, Millennium upgrade, server upgrade with RAID, added software modules	\$170,743			0.5	\$85,372	0.5	\$85,372					
Table of Contents service	\$3,900					1	\$3,900	1	\$3,900	1	\$3,900	
Table of Contents record load	\$1.05						\$36,750		\$1,050		\$1,050	
Additional automation system maintenance	\$922							1	\$922	1	\$922	
A2 Dell GX260 minitower computers	\$1,347			13	\$17,511	25	\$33,675					
Add Centurion Guards for OPAC computers	\$90			7	\$630	15	\$1,350					
Subtotal			\$0		\$103,513		\$161,047		\$5,872		\$5,872	
Total												\$276,303

Note that 'A1' and 'A2' indicate the start of purchases matching recommendations A1 and A2 in the previous section. A similar format is used on the other budget spreadsheets in this report. Minor discrepancies are attributable to rounding.

B. Streamlined Service

This section addresses issues associated with:

1. *Installing a radio frequency identification system (RFID) to simplify the materials management process, allowing patrons to do self-checkout and improving staff workflow and processes.*

Current Service Level at the Chapel Hill Public Library

The Library currently uses Checkpoint radio frequency (RF) tags to secure materials. The RF tags communicate with the Checkpoint security gate at the exit. The RF tags will cause an alarm to go off in the gate if material is not properly checked out. During the checkout process staff manually disarm the RF tags.

Exemplary Practices

A library that has successfully streamlined its workflow and service to the public would demonstrate the following characteristics:

- Patrons can easily and quickly check out their own materials if they so desire
- Staff can quickly and accurately process numerous items without extensive handling
- Staff can obtain an accurate inventory of library materials with the assistance of computing devices and scanners
- Library materials will set off an alarm when improperly removed from the library

Several libraries that have successfully mastered the handling of library materials are The Santa Clara City Library (CA), Farmington Community Libraries (MI), and the Cerritos Millennium Library (CA) described at

<http://www.checkpointsystems.com/rfid/success.asp>

Development Ideas for the Chapel Hill Public Library

A New Way to Handle Library Materials: Radio frequency identification (RFID) technology has been engineered by library vendors to control the flow of materials in a library. Using RFID technology, the library's operational functions of check-out and check-in, inventory control, and loss prevention can be significantly improved.

The major vendors of RFID technology for libraries are 3M and Checkpoint Systems. A comprehensive RFID system, like the one offered by Checkpoint Systems, consists of three components. The first component is a RFID tag that is programmed with unique information and imbedded in each library item. The second component is an antennae or

sensor that reads the RFID tags. The third component is a server that receives and decodes information and communicates with the library automation system.

With a RFID system, the movement of materials is much more efficient for staff. A stack of books can be checked-in or checked-out without individually manipulating each book. This saves time and also reduces the repetitive motions performed by staff.

In a similar manner, RFID systems can allow patrons to be more self-sufficient. Using self-check systems that communicate with the library automation system, a patron can easily check-out a stack of books. RFID self-check systems don't require the precise handling and alignment that older self-check systems require.

Exit control is more reliable with a RFID system. There are fewer false alarms than with conventional exit security systems. In addition, if an item is stolen, the system can identify that item so that it can be replaced.

A hand-held scanner can be used to scan books on a shelf without tipping them out or removing them. The scanner can inventory books or even identify books out of order.

Streamlined Service - Recommendations / Projects

Recommendation B1: Install a radio frequency identification system (RFID) to simplify the materials management process, allowing patrons to do self-checkout and improving staff workflow and processes.

Projects		Target Completion Date	Cost Data
1	Evaluate RFID materials management and assess feasibility	June 2004	
2	Implement an RFID system	June 2005	\$233,000 ^{*1}
^{*1} Cost based upon the purchase of Checkpoint's Intelligent Library System for \$83,325. Add \$119,000 for 140,000 tags (circuits). Add \$8,400 for 140,000 cover labels. Add \$22,275 for a three-year maintenance agreement that is paid one-third each year starting with installation.			

C. Electronic Reference Service

This section addresses issues associated with:

- 1. Providing reference services that patrons can use from remote sites.*
- 2. Developing and maintaining the library's website to meet current information needs.*
- 3. Promoting patrons' awareness of NC Live databases.*

Current Service Level at the Chapel Hill Public Library

The Library does not currently offer remote reference services.

The Library's website is attractive and includes a wide variety of information. It can be accessed at <http://townhall.townofchapelhill.org/library/index.htm>.

The Library's databases are primarily provided by North Carolina Libraries for Virtual Education (NC Live). NC Live provides online access to complete articles from over 5,500 newspapers, journals, magazines, and encyclopedias; indexing for over 15,000 periodical titles; and access to over 13,000 electronic books. NC Live is a \$2 million resource supported by the General Assembly and the Citizens of North Carolina. NC Live is an excellent and cost effective resource for the citizens of Chapel Hill.

Exemplary Practices

A library that excels in electronic reference service would offer the following:

- Remote reference services that suit its patrons' needs
- A comprehensive website that allows patrons to remotely use a variety of library products and services
- A full suite of full-text and reference databases customized for citizen research needs

The public libraries in Carrollton, Irving, North Richland Hills, and Plano in the Dallas, Texas area provide remote reference services to their patrons. More information is available at <http://www.answerzone.org/>.

Development Ideas for the Chapel Hill Public Library

Electronic library services allow patrons to work from their homes and offices if that is their preference. Some popular electronic library services include remote reference services, a comprehensive library website, and electronic full-text databases.

Remote Reference: Remote reference products range from the simple to the very complex. Email and instant messenger programs are simple programs that can be used as remote reference tools. Using email, a librarian and a patron can simply correspond back and forth. Instant messenger programs are more interactive. Some examples of instant messenger programs are AOL Instant Messenger (AIM), Yahoo Instant Messenger (YIM), and I See You (ICQ). Using an instant messenger program, a librarian and a patron can have an interactive chat session.

More sophisticated remote reference tools can allow a librarian to co-browse with a patron on a remote computer to guide them through a complicated search. An example of a full-functioned remote reference tool is Virtual Reference Toolkit by LSSI. See http://www.vrtoolkit.net/Virtual_prod_serv.htm for more information on the Virtual Reference Toolkit. A virtual reference bibliography can be found at http://www.lib.ncsu.edu/staff/jeboyer/virtual_reference.html.

Some libraries offer 24 hours a day remote reference service. More commonly, libraries offer remote reference services during a set number of hours per week.

Website Development: As electronic products and services continue to expand, the need to organize these products and services becomes critical. A good website can help to organize a full range of services for library users.

The Library is committed to providing an excellent Web presence but is behind in its development when compared to some other library websites. Two public library websites that are frequently mentioned as models are The Las Vegas / Clark County Library District at <http://www.lvcld.org/> and The Tucson-Pima Public Library at <http://www.lib.ci.tucson.az.us/>.

Many library websites have developed piece by piece as specific needs arose. A more efficient and effective strategy for developing a website is to work through a master website plan. The master plan approach will ensure that website development takes place in a structured, coordinated manner.

Full-text Databases: NC Live is a rich and cost-effective resource. It addresses most online full-text needs articulated by library patrons. Instead of adding other fee-based subscription databases at this time, the Library should better publicize the broad functionality available in NC Live. At a later time, staff can evaluate if other databases are required in addition to NC Live databases.

Electronic Reference Service - Recommendations / Projects

Recommendation C1: Provide reference services that patrons can use from remote sites.

Projects		Target Completion Date	Cost Data
1	Implement email reference that is accessible from the library's website	January 2004	
2	Implement chat-based reference using freely available software	June 2004	
3	Investigate advanced remote reference services	January 2005	
4	If feasible, implement sophisticated remote reference services such as LSSI's Virtual Reference Toolkit	June 2005	\$39,000 ^{*1}
<p>^{*1} Based upon a one-time setup and training fee of \$9,000 plus \$6,000 per seat per year for a virtual reference librarian at the Chapel Hill Public Library. A seat is a computer used by one librarian to provide remote reference. This is the cost for the service over three years as detailed in the spreadsheet at the end of this section. An alternative is to outsource remote reference and pay a \$2,500 one-time setup fee and \$7,500 per year for 500 question bundles for remote reference to be provided out of LSSI's Maryland office.</p>			

Recommendation C2: Develop and maintain the library's website to meet current information needs.

Projects		Target Completion Date	Cost Data
1	Evaluate the library's existing website	January 2004	
2	Develop a master plan for areas of improvement to the website	June 2004	
3	Enhance and improve the library's website based on the master website plan	January 2005	

Recommendation C3: Promote patrons' awareness of NC Live databases.

Projects		Target Completion Date	Cost Data
1	Continue to provide additional training to staff on NC Live	June 2003	
2	Develop and implement a comprehensive public relations plan for increasing NC Live use	January 2004	
3	Provide training to patrons on NC Live	January 2004	

D. Public Access Computing

This section addresses issues associated with:

- 1. Providing 28 public Internet computers as recommended by North Carolina Public Library Association guidelines.*
- 2. Upgrading software and equipment based upon the Town of Chapel Hill Information Technology Department's plan for replacement.*
- 3. Ensuring a safe Internet browsing experience for children.*
- 4. Installing a PC management system to efficiently control the flow of patron traffic to public Internet computers.*
- 5. Conducting an annual review of library electronic products and services as part of the Town of Chapel Hill's CIP development process.*

Current Service Level at the Chapel Hill Public Library

The Library offers nine Internet-connected computers for public use and four computers for patron-assisted searches. There is frequently a waiting line to use the Internet-connected computers.

The nine public Internet computers have a variety of hardware and software. Computer processors range from Intel Pentiums with MMX to Intel Pentium 4. Operating systems are a combination of Windows 95 and Window NT 4.0. Some of the computers have Microsoft Office XP applications. There is no antivirus software on the computers. A hardware and software device called Centurion Guard removes patron changes to the computers when they restart.

A networked black-and-white printer is connected to the public Internet computers. The printer is managed by an ITC Systems Print Manager system. The ITC system allows the Library to recover printing costs by charging patrons for their print jobs.

Internet queue management is provided at the Reference desk. Patrons must sign in to use Internet computers. Patrons receive restaurant-style pagers to let them know when an Internet computer is available for their use.

Exemplary Practices

First-rate library public access computing areas can be described as follows:

- The wait for public Internet computers is usually minimal
- Computers are fast and have access to the most commonly used peripherals such as CD-RW, scanners, color printers
- Software is up-to-date and consistent from computer to computer
- Computers are secured so that patrons can't damage their data with viruses

- Connectivity to the library's resources can be easily established from a patron's mobile computing device
- Ample space is provided to ensure patron comfort and privacy

The Hickory Public Library in Hickory, North Carolina provides 44 public Internet computers for a population of approximately 36,051. More information on the Hickory Public Library can be found at <http://www.ci.hickory.nc.us/library>.

Development Ideas for the Chapel Hill Public Library

Internet Stations: The Chapel Hill Public Library needs to add an additional 17 computers to meet the current North Carolina Library Directors' recommended guidelines of one Internet computer for every 2500 patrons in the Library's service area. By 2007, the present guidelines would require 28 computers to adequately meet the needs of the projected service population.

The Town of Chapel Hill Information Technology Department replaces staff computers on a three year cycle. Public Internet computers and OPAC computers need to be incorporated into the same replacement cycle.

PC Management Systems: Adding public Internet computers puts an increased demand on library staff to manage the Internet queue and equipment problems. Staffing implications of a larger computer area must be carefully thought out.

A number of systems are now available to help libraries manage the growing number of public Internet computers. A PC management system can handle the assignment of patrons to computers with no or minimal interaction from the library staff. These systems help save time for both patrons and staff. Some systems even allow patrons to make computer reservations over the Internet.

An example of a PC management system is PC Reservation by Envisionware, Inc. PC Reservation can be setup in a self-service mode or in a staff-management mode. Reservations can be made for a future day and time or for the present. The PC Reservation system is highly configurable depending on the needs of the library. Different 'zones' of computers can have different reservation and usage policies. Another product, called CybraryRSVP by Computers By Design Inc., is a reservation system that allows patrons to make public Internet computer reservations via a website or a self-service station.

Safety on the Internet: A rich set of educational and entertainment information is available today on the Internet for children. As computing resources are expanded, the needs of children must be taken into account. Filtering software, if carefully implemented, can help ensure a safe computing experience for the library's younger patrons.

Computers By Design Inc. offers the CybraryN Suite, which includes a menu and security program that controls access to public access computers. It also offers a customizable Internet browser that can control access to external sites. CybraryN is easy to integrate with any Innovative system that has an Innovative Patron API module installed.

Antivirus Tools: New viruses appear on the Internet every day. A malicious virus can damage patron data and even the public Internet computer that he or she is using. These problems can be frustrating and time-consuming to repair. It is particularly important to incorporate an effective antivirus tool into the public computer environment. Antivirus software should be updated daily. The software should be scanning for viruses at all times.

Providing a Uniform Equipment and Software Environment: All public Internet computers in the library should have a similar configuration to ensure that patrons have a predictable computing experience. If this is done, a patron will not need to adjust to each computer that he or she uses each time she visits the Library. This will enhance patron satisfaction and will reduce staff time in handling equipment and software compatibility problems.

Library desktop computers should use current software that is regularly updated with service packs and other patches. At this point in time, Windows XP and Windows 2000 are current operating systems. Computers using older operating systems should be upgraded.

Web browsers and office application software should also be kept up-to-date. Patrons will gain access to the new features incorporated into the newest versions of these products. Also, newer versions are less vulnerable to security flaws. Internet Explorer 6.0 Service Pack 1 (SP1) is currently the latest version of Internet Explorer. Microsoft Office XP is the latest version of Microsoft Office. Microsoft Office 2000 is the prior version of Microsoft Office; versions older than that should be upgraded.

Peripherals: Additional peripherals and software can make the public Internet computers even more useful for patrons. For example, flatbed scanners have improved significantly in quality as they have decreased in price. Patrons can use flatbed scanners to digitize documents and to scan slides. Library patrons would also like to have the option to print in color. Color printing would allow them to more accurately capture research and other detailed information. CD writers have also come down significantly in price. They can use inexpensive CD-R (CD-Recordable) or CD-RW (CD-Rewritable) discs to store approximately 650MB worth of data. CD writers can be used by patrons to store their research and other data.

Wireless Technology: In addition to providing Internet-connected computers, the Library should consider providing Internet connectivity to mobile computing devices brought to the Library by patrons. Examples of mobile computing devices are Personal Digital Assistants (PDAs), Tablet PCs, and laptops. Many public libraries today allow patrons to

plug into wall network jacks to access the library network and the Internet. A number of libraries are also evaluating and implementing wireless technologies to enable patron Internet connectivity. A list of public and college libraries using wireless technologies can be found at:

<http://people.morrisville.edu/~drewwe/wireless/wirelesslibraries.htm>

Space: The Chapel Hill Public Library is developing a building program to identify space needed for all library services in the future. Space implications for new and expanded information technologies will need to be included in this review.

Public Access Computing - Recommendations / Projects

Recommendation D1: Provide 28 public Internet computers as recommended by North Carolina Public Library Association guidelines.

Projects		Target Completion Date	Cost Data
1	Evaluate and implement additional software and hardware peripherals on public Internet computers	January 2004	\$ 810 ^{*1}
2	Increase the number of public Internet computers from nine to 20. Add a second printer for these computers.	June 2004	\$23,705 ^{*2}
3	Increase the number of public Internet computers from 20 to 28. Evaluate if a third printer is required.	January 2005	\$11,496 ^{*3}
4	Evaluate the need for additional public Internet computers	June 2005	
^{*1} Cost based upon three HP Scanjet 5370C scanners at \$270 each from the HP state contract. ^{*2} Cost based upon adding 11 Dell GX260 minitower computers at \$1,347 each (\$14,817 total), which includes Microsoft software. Add \$990 for Centurion Guard devices. These devices remove patron changes from computers at reboot. Add \$2,560 for an HP 4550N color laser workgroup printer. Add \$1,347 for another print server. Add \$1,995 for an ITC Model 5020 Controller that accepts patron money. Add \$1,996 for ITC print server software. ^{*3} Cost based upon adding eight Dell GX260 minitower computers at \$1,347 (\$10,776 total) which includes Microsoft software. Add \$720 for Centurion Guard devices.			

Recommendation D2: Upgrade software and equipment based on the Town Information Technology Department's plan for replacement.

Projects		Target Completion Date	Cost Data
1	Upgrade the software on existing public Internet computers. Replace computers as necessary. Implement Command Software Anti-Virus software for existing public Internet computers	January 2004	\$ 9,729 ^{*1} ^{*2} ^{*3}
<p>^{*1} The State of North Carolina has a site license for Command Software Anti-Virus. It is available to public agencies at no charge.</p> <p>^{*2} Cost based upon the replacement of seven outdated computers with Dell GX260 Minitower 2.53 GHz with 256MB RAM from the Dell North Carolina Store at \$1,347 each (\$9,429 total), which includes Microsoft software. Add \$300 to update the Microsoft software (Windows and Office XP) on the two remaining computers.</p> <p>^{*3} Staff computers are already in the Town Information Technology Department three-year replacement cycle. As previously stated both public Internet computers and OPAC computers should be added to that replacement plan.</p>			

Recommendation D3: Ensure a safe Internet browsing experience for children.

Projects		Target Completion Date	Cost Data
1	Evaluate and implement filtering on children's Internet computers	June 2004	\$ 185 ^{*1}
<p>^{*1} Based upon a five user license for CyberPatrol filtering software for \$185.</p>			

Recommendation D4: Install a PC management system to efficiently control the flow of patron traffic to public Internet computers.

Projects		Target Completion Date	Cost Data
1	Evaluate and implement a public PC management system	June 2004	\$15,162 ^{*1}
<p>^{*1} Based upon a license for the CybraryN Suite for 21 to 50 computers. The CybraryN Suite includes CybraryN, CybrarySite, CybraryPRiNT, and CybraryRSVP. Maintenance is 30% of the purchase price starting in year two of product use. \$15,162 is the total cost over four years. The Library already has a printing solution and therefore does not require CybraryPRiNT. However, the suite is still the most cost effective way to purchase the needed set of CybraryN products.</p>			

Recommendation D5: Conduct an annual review of library electronic products and services as part of the Town of Chapel Hill's CIP development process.

Projects		Target Completion Date	Cost Data
1	Evaluate the feasibility of a test area for patron wireless or wired Internet connectivity.	January 2004	
2	Implement a test patron Internet connectivity area	June 2004	\$ 499 ^{*1}
3	Expand the test patron Internet connectivity area if that area proves to be a popular library service	June 2005	\$ 499 ^{*1}
4	Review library electronic products and services	January 2006	
5	Review library electronic products and services	January 2007	
^{*1} Based upon the cost of a Linksys Wireless 802.11b network access point for \$109. Add three Category 5e cable runs at a cost of approximately \$130 each.			

E. Patron Training / Staff Training

This section addresses issues associated with:

- 1. Providing staff with appropriate technical skills to satisfactorily perform their jobs and to serve the public.*
- 2. Sponsoring training opportunities for patrons to improve their information seeking skills.*
- 3. Providing self-study training materials to patrons and staff to improve their information seeking skills.*

Current Service Level at the Chapel Hill Public Library

The Chapel Hill Public Library does not currently offer classes on information technology topics for the staff and the public. In past years some of the staff's training needs were met by purchasing vouchers for classes provided by a local software training organization. The Library worked with the Town of Chapel Hill's Human Resources Training Coordinator who coordinated the voucher program.

Exemplary Practices

A library that excels in providing technical training opportunities for its staff and patrons might offer the following:

- Automated library system training for new staff and advanced library system training for experienced staff
- Classes on searching the catalog and full-text databases, Internet usage, email, computer basics, Web page design, Microsoft Office, and other high-demand topics to staff and patrons

Examples of extensive computer training programs can be found at The Providence Public Library at <http://www.provlib.org/elibrary/schedules/elib.htm> and The Deschutes Public Library at <http://www.dpils.lib.or.us/Page.asp?NavID=19>.

Development Ideas for the Chapel Hill Public Library

Continuous Technology Learning: New technology is useless unless staff and patrons know how to use it. Regular learning opportunities are imperative to keep staff and patrons knowledgeable about new technology.

The *North Carolina Public Library Directors Association Guidelines for North Carolina Public Libraries* (1998) offers two related guidelines. The first guideline advises "Library staff have appropriate training in basic computer use, computer operating systems and all

electronic formats available to the public and for staff use." The second guideline advises "In-house training experts are selected and trained."

Numerous free and low-cost learning opportunities are available to library staff. Unless library staff are continuously learning about technology, they are falling behind. Some areas where Chapel Hill Public Library staff need further training are in the use of the Innovative system, office applications such as Microsoft Word and Excel, and basic computer troubleshooting.

Teaching the public how to use technology is a tremendous opportunity for public libraries. There is a great need by library patrons to learn how to access information efficiently and effectively. Some areas where patrons may need training are in the basic use of a computer and searching the Internet and online databases.

Self-paced Learning: Online technical training and training CDs are available from a number of vendors. These resources are of particular interest since staff and patrons could use them independently and at a low cost. One company that offers Microsoft Office training CDs is Planetlearn at <http://www.planetlearn.com>. A company that offers online Microsoft Office training is Learn2 at <http://www.learn2.com>.

Patron Training / Staff Training - Recommendations / Projects

Recommendation E1: Provide staff with appropriate technical skills to satisfactorily perform their jobs and to serve the public.

Projects		Target Completion Date	Cost Data
1	Assess areas where library staff need further technical training	June 2003	
2	Develop a guide of potential training providers for staff and the public. This guide should include community volunteers, community partners, library organizations, and commercial training organizations. Revise this guide on an ongoing basis as necessary	June 2003	
3	Develop a plan to address staff technology training needs using the training provider guide	June 2003	
4	Repeat steps 1 & 3	January 2004	
5	Repeat steps 1 & 3	January 2005	
6	Repeat steps 1 & 3	January 2006	
7	Repeat steps 1 & 3	January 2007	

Recommendation E2: Sponsor training opportunities for patrons to improve their information seeking skills.

Projects		Target Completion Date	Cost Data
1	Assess areas where library patrons need and desire further technical training	June 2003	
2	Sponsor training classes to assess patron technical educational needs	January 2004	
3	Repeat steps 1 & 2	January 2005	
4	Repeat steps 1 & 2	January 2006	
5	Repeat steps 1 & 2	January 2007	

Recommendation E3: Provide self-study training materials to patrons and staff to improve information seeking skills.

Projects		Target Completion Date	Cost Data
1	Evaluate and purchase self-study technical training CDs	June 2003	\$1,200 ^{*1}
2	Repeat step 1, add online courses	January 2004	\$5,490 ^{*1*2}
3	Repeat step 2	January 2005	\$6,205 ^{*1*2}
4	Repeat step 2	January 2006	\$6,920 ^{*1*2}
5	Repeat step 2	January 2007	\$8,350 ^{*1*2}
^{*1} In each year, an unlimited user license is purchased for a set of information technology training CDs from a company such as Planetlearn. The cost is approximately \$1,200. ^{*2} Starting in 2003 - 2004, online training seats are purchased through a company such as Learn2. Learn2 charges based upon the number of seats and the number of training areas. A seat can be used by only one student per year. The Microsoft Office training area includes 135 courses. The cost is \$72 per seat.			

F. Infrastructure Development

This section addresses issues associated with:

- 1. Securing the Library's network to prevent disruptions of service.*
- 2. Improving the Library's wiring infrastructure, including the use of wireless networking, to modernize electronic products and services.*
- 3. Providing appropriate equipment to systems personnel to effectively maintain the Library's technology environment.*
- 4. Developing a technology disaster plan to ensure the recovery of essential computerized library products and services in the event of a disaster.*

Current Service Level at the Chapel Hill Public Library

Staff computer Internet connectivity is protected by the Town Information Technology Department's Internet Security and Acceleration (ISA) server. There is no information security applied to the Internet connection used by the public.

Most of the wiring in the Library is old copper wire designed for serial connectivity with text-based terminals. This wire will not support new computing devices that require network and Internet access. Cabling that was specifically run for computer connections in the Library is Category 5. This cabling should be satisfactory for the next few years.

Several network devices enable connectivity to the Innopac system, other library devices, and to the Internet. Two 24 port BayStack 350 series switches allow connections of 10 Mbps or 100 Mbps. A Cisco uBR900 series cable access router enables connectivity to the Internet using Time Warner Cable's Road Runner Business Class service.

The Library does not currently operate a local area network (LAN). Staff computers are managed from the Town Information Technology Department's LAN. Two Town servers are housed at the Library.

The Library does not currently have a technology disaster plan. A technology disaster plan is necessary because computers and networks are essential to patron service and staff productivity. The Library needs a plan to help recover services as quickly as possible should a disaster occur.

Exemplary Practices

A model library technology infrastructure can be described by the following characteristics:

- Library Internet connectivity is protected by a firewall or a similar Internet security appliance
- Network cabling is primarily Category 5e or better

- Fast or Gigabit Ethernet networking devices connect computing devices to each other and to the Internet
- Procedures are in place to assess and deal with risks

Development Ideas for the Chapel Hill Public Library

Internet Security: A fast and secure library network is a prerequisite for many of the technology projects discussed in this plan. Information security has become a major information technology topic in recent years. Viruses, worms, Denial of Service attacks and other information attacks can lead to data loss and extensive downtime. The library network must be protected from these attacks by the use of a firewall and other security tools. Firewalls for libraries can be powerful, cost-effective, and relatively easy to configure. The Chapel Hill Public Library should purchase a firewall that is certified by ICSA Labs. More information on ICSA Labs certification can be found at <http://www.icsalabs.com/html/communities/firewalls/index.shtml>.

Cisco Systems, Inc. publishes a document that is helpful in analyzing network and Internet risks. Cisco's *Network Security Policy: Best Practices White Paper* is available at <http://www.cisco.com/warp/public/126/secpol.html>. The document discusses how to do a risk analysis to identify risks to your network, network resources, and data. The document also addresses how to monitor the security of your network.

Cabling Upgrades: New cable must be installed for the additional networked computers that are recommended in this plan. New cabling should be Category 5e or perhaps even Category 6 which was standardized in June 2002. Category 5e and Category 6 cabling will enable network transmission at speeds of 100 Mbps and beyond.

Wireless networking is another option for connecting computing devices in areas with limited or no Ethernet cables. Wireless networking devices have improved in quality as they have come down in price over the past few years. A wireless networking project is recommended in section D.

Additional networking devices will be required to connect the additional cables and networked computers to each other and to the Internet. Several additional fast Ethernet network switches are recommended.

Systems Equipment and Tools: The new library systems personnel will need equipment and tools so that they are effective in their jobs. A Windows 2000 server is basic and essential equipment. The server can be used to store essential data and files that can be shared and distributed easily. The server can also enable patrons with laptops or wireless devices to connect to the Internet in conjunction with the library's test Internet connectivity area described in section D.

The server can help systems staff to maintain the public Internet and OPAC computers by using Norton Ghost software. For example, systems staff can configure a public Internet

computer and an OPAC computer. Once the configurations are proven satisfactory, Norton Ghost can be used to replicate the configurations to other computers on the network. In this manner, malfunctioning or corrupt computer configurations can be quickly repaired.

Technology Disaster Plan: The Chapel Hill Public Library needs to develop a disaster plan for computers and networks. Such a plan can be indispensable in keeping essential automated library services running in the event of a disaster. More information on technology disaster planning can be found at The Public Library Association Tech Note site at: http://www.pla.org/publications/technotes/technotes_disasterplanning.html.

There are a number of elements to a good technology disaster plan. A good backup strategy should be a key component of every plan. Data backups should be produced daily. Usually these are produced to tape. At least once per week, backup tapes should be sent offsite to guard against data loss from potential facility destruction.

Infrastructure Development - Recommendations / Projects

Recommendation F1: Secure the library's network to prevent disruptions of service.

Projects		Target Completion Date	Cost Data
1	Evaluate the security of the library's network	January 2004	
2	Implement recommended security changes to the library's network	June 2004	\$2,186 ^{*1}
*1 Based upon the purchase of a SonicWALL Pro 200 Internet security appliance that delivers firewall capabilities for medium-sized networks.			

Recommendation F2: Improve the Library's wiring infrastructure, including the use of wireless networking, to modernize electronic products and services.

Projects		Target Completion Date	Cost Data
1	Assess the library's existing wiring infrastructure and associated network devices such as hubs, switches, and routers.	June 2003	
2	Upgrade the library's wiring infrastructure and associated network devices such as hubs, switches, and routers.	June 2004	\$11,751 ^{*1}
*1 Based upon 60 Category 5e cable runs to replace text-based terminal cables and add public Internet computers. Each run cost approximately \$130. Add the cost of two Category 5e patch panels at \$300 each. Add three 3Com Superstack 3 Switch 4400 24-port switches at \$1,117 each.			

Recommendation F3: Provide appropriate equipment to systems personnel to effectively maintain the library's technology environment.

Projects		Target Completion Date	Cost Data
1	Implement a Windows 2000 server to help maintain the library's technology	June 2004	\$5,382 ^{*1}
*1 Based upon the purchase of a Dell PowerEdge 2600 2.4GHz with 1GB SDRAM from the Dell North Carolina Store for \$4,549. Add the cost of Symantec Ghost licenses purchased for duplicating the configuration of public and OPAC computers (approximately 49 licenses at \$17 each).			

Recommendation F4: Develop a technology disaster plan to ensure the recovery of essential computerized library products and services in the event of a disaster.

Projects		Target Completion Date	Cost Data
1	Develop an information technology disaster plan	January 2005	
2	Revise disaster plan	January 2006	
3	Revise disaster plan	January 2007	

G. Human Resource Considerations

This section addresses issues associated with:

1. *Providing adequate systems staff to develop and support the Library's emerging products and services.*

Current Service Level at the Chapel Hill Public Library

The Chapel Hill Public Library does not have a dedicated systems staff. The technological development to-date has been accomplished primarily by The Library Assistant Director, other library staff, and the Town Information Technology Department.

Exemplary Practices

A library with the appropriate level of technical support might be described as follows:

- In-house technical staff can satisfactorily develop and maintain the technology required to support patron needs
- Town Information Technology staff provide additional support particularly in the areas of wide area networking, site licenses, and computer upgrades

Some of the challenges encountered by the library systems staff of the Novi Public Library (<http://novi.lib.mi.us/>) are described in the November / December 2001 issue of *Computers in Libraries*.

Development Ideas for the Chapel Hill Public Library

“The position of systems librarian – and its variants – has become increasingly important over the last decade. Any library that has a systems person could not function without him or her, and libraries that are dependent on another agency for systems support wish they had a specialist in residence.” - Laverna Saunders, Contributing Editor, March 1999, *Computers in Libraries*.

Growing Technology Needs: As the Library develops over time, it will become increasingly dependent on technology related tools and resources. It will be impossible under current staffing levels for the staff to keep up with the increased demand and workload. **This area is the most important part of the technology plan. Without this component, the other projects in this plan will be delayed or will not happen at all.**

It will continue to be very important for the library systems division to work closely with the Town Information Technology Department. The Library will continue to rely on the Town Information Technology Department for a number of services including the

upgrade of staff computers and hopefully public computers. In addition, other library staff should assume greater technical responsibilities. For example, Public Services staff might contribute to the development of the website. Technical Services staff might share some of the ILS system management functions.

In-house Systems Staff: The Chapel Hill Public Library should meet the North Carolina Library Directors Association minimum guidelines for technology staffing. This would include “at least one full-time computer technician ...for every 50 computer workstations and related printers and peripherals” and “a systems manager ...assigned to each library system.”

The Library's *Five Year Services Plan* identified two positions that should be primarily responsible for the library's technology. The first position is for a Library Systems Manager. That person could manage and help coordinate all technology efforts in the Library. He or she could develop the ILS, the library's technical infrastructure, and public Internet computing.

The other position that was identified in the plan was for a Library Assistant. Since the Library is open 68 hours per week, two Library Assistants are recommended. These positions could be the primary points of contact for daily staff and patron computing problems.

The Library's Systems Manager and Library Assistants would work with the library staff, the Town Information Technology Department, the Citizens Technology committee, and community partners to help integrate developing technology into the library environment.

Human Resource Considerations - Recommendations / Projects

Recommendation G1: Provide adequate systems staff to develop and support the library's emerging products and service.

Projects		Target Completion Date	Cost Data
1	Hire two Library Assistant IIIs to assist in technology areas (\$62,780/year)	July 2003	\$262,648 ^{*1}
2	Hire a Library System Manager (\$53,130/year)	July 2003	\$222,276 ^{*2}
3	Review the staffing level for library technology development and support	June 2004	
<p>^{*1} Two LA IIIs start in July 2003 at an annual cost of \$31,390 each. Costs are taken from the <i>Five Year Services Plan</i>. An annual three percent cost-of-living increase is added over time. This is the total cost for the two LA IIIs through 2007.</p> <p>^{*2} The System Manager starts in July 2003 at a cost of \$53,130 per year. Costs are taken from the <i>Five Year Services Plan</i>. An annual three percent cost-of-living increase is added over time. This is the total cost for System Manager through 2007.</p>			

V. Evaluation Process

All ongoing projects should be formally evaluated in the middle of the [fiscal] year. Each project should be rated on the following criteria:

- Potential value to patrons
- Extent of staff time required
- Project cost
- Efficiency of project management
- Sustainability of project (i.e., can staff and available money support it over time)

Projects that fail to meet an overall satisfactory rating are subject to a mandatory review. The review should suggest ways to boost the project rating. If no such suggestions are applicable, then the project should be postponed or terminated. Further guidelines for project evaluation should be determined by the Library Director.

VI. Final Notes

Technology changes rapidly and as a result a technology plan can be outdated within a year. Other events, such as a potential library renovation, can have a major impact on this plan. In order to keep this plan relevant, it should be revised every year in the months of October and November.

Each year, new ideas should be incorporated into the plan. Old, bad, or impractical ideas should be removed. The plan must be continuously monitored to ensure that it matches the needs of the citizens of Chapel Hill.

The evolving technology in the Library will require a commitment of staff, space, and financial resources from the Town and the citizens of Chapel Hill. The Library is not currently where it should be from a technological standpoint. This plan and a strong commitment from library stakeholders are necessary to evolve library technology to where it should be in 2007.

Appendix A - Glossary

Category 5, 5e, 6 copper wiring standards – increasingly strict standards for unshielded twisted-pair copper wire.

CD-RW - compact disk format that allows repeated writing on an optical disk.

Denial of Service (DoS) attack - A common Internet based information attack aimed at preventing a system or site from working.

DVD - digital versatile disk using an optical disk format.

Ethernet - widely used local area network technology.

Firewall - a set of software and / or hardware that protect a private network from the greater network.

Gigabit - 1,000,000,000 bits.

Hub - A network device where data converges and then is sent out again.

ILS - Integrated Library System, software modules that form a modern library automation system.

LAN – Local area network, a network in a confined geographic area.

Mbps - Megabits per second, a measure of network bandwidth.

Mediated Search - A literature and reference search done by a professional librarian for a patron.

OPAC - Online public access catalog, a terminal or computer intended primarily for patrons to access the library's catalog.

Operating System - The program that manages all other programs on a computer system.

PC Management system - A system of software that helps to manage the use of public Internet computers thereby saving time for both staff and patrons.

Personal Digital Assistant (PDA) - a small hand-held computing device.

Port - A place to physically connect to a networking device.

RFID - Radio Frequency Identification, used for material management in libraries.

Router - A network device that forwards data to the next network destination.

Switch - A network device that selects a path for sending data.

Tablet PC - A small personal computer operated primarily with handwriting via a stylus.

Virtual Reference - A method of providing references services to a patron via a computer remotely.

Z39.50 – A standard communications protocol for the search and retrieval of bibliographic data.

Appendix B - References and Contacts

3Com switches and other 3Com products are described at <http://www.3com.com>

3M RFID technology is described at <http://www.3m.com/market/security/library/didsol.jhtml>

The Answer Zone remote reference site can be found at <http://www.answerzone.org/>

Bay Network was acquired by Nortel Networks, information is available at <http://www.nortelnetworks.com>

Berry III, John N. "Library of the Year: Kalamazoo Public Library." *Library Journal* 127 (June 15, 2002): 32-35.

Centurion Guard information is available from <http://www.centuriontech.com/English.html>

Chapel Hill demographic information is available from <http://www.townofchapelhill.org/index.htm>

Chapel Hill Public Library Five Year Services Plan: 2001 - 2006 and Long Term Facilities Needs Through 2020 by Ruth O'Donnell, Consultant Services, September 30, 2001

Checkpoint Systems RFID technology is described at <http://www.checkpointsystems.com/rfid/>
Contact Chris Gabriel at 800.257.5540 x3676 or chris.gabriel@checkpt.com

Committee Report from The Library Needs Assessment Task Force to The Mayor and Town Council dated June 14, 1999

Cisco Systems, Inc. information is available at <http://www.cisco.com/warp/public/126/secpol.html>.

CybraryN information is available from <http://www.cbdusa.com>
Contact Matthew Davis at 1.800.THE.TOWN

Definitions from <http://www.whatis.com>

The Fort Collins Public Library (a featured Innovative library) can be viewed at <http://www.fcgov.com/owl>

Hennen's American Public Library Ratings (HAPLR) can be found at <http://www.haplr-index.com/>

The Hickory Public Library can be found at <http://www.ci.hickory.nc.us/library>

Innovative Interfaces Inc. can be found at <http://www.iii.com>

ITC Systems provides print charging systems. More information can be found at <http://www.itcsystems.com>

The Kalamazoo Public Library (2002 Library of the Year) can be viewed at <http://www.kpl.gov/index.html>

The Las Vegas / Clark County Library District (a model website) can be viewed at <http://www.lvcld.org/>

Learn2 offers online information technology training at <http://www.learn2.com>

Contact Mara Reuben at 800.544.1023.

The Library & Information Technology Association (LITA) does an excellent job of documenting technology trends at <http://www.lita.org/committe/topotech/mainpage.htm>
Please see this source for complete information.

LSSI remote reference information can be found at http://www.vrtoolkit.net/Virtual_prod_serv.htm

Contact Louise Steward at louises@lssi.com or 503.253.2681.

Moore, Kahterine L. Bell and Knox, Karen C. "How Can We Survive in Reality Library?" *Computers in Libraries* 21 (November / December 2001): 34 - 38.

NC Live information can be found at <https://nclive.lib.ncsu.edu/web/about.shtml>

North Carolina Public Library Directors Association Guidelines for North Carolina Public Libraries (1998) is available at <http://statelibrary.dcr.state.nc.us/ncplda/guidelines.htm>

North Carolina statistical data is available from <http://linc.state.nc.us/>

The Novi, Michigan Public Library has a systems department and can be viewed at <http://novi.lib.mi.us/>

Planetlearn offers information technology educational materials and can be found at <http://www.planetlearn.com>

Contact Planetlearn at 888.277.6556

The Public Library Association's disaster planning TechNote is available at http://www.pla.org/publications/technotes/technotes_disasterplanning.html

The Rodman Public Library (a featured Innovative library) in Alliance, Ohio can be viewed at

<http://www.rodmanlibrary.com/>

Santa Clara City Library (and information about their RFID implementation) can be found at

<http://www.library.ci.santa-clara.ca.us/>

The SonicWALL Internet appliances can be found at

<http://www.sonicwall.com>

Time Warner Cable's Road Runner Business Class service information is available at

<http://www.rr.com/rdrun/>

Total Network Solutions has pulled library cables in the past. Contact Gary Wilson at 919.550.8080 or gar1216@aol.com

The Tucson-Pima Public Library (a model website) can be viewed at

<http://www.lib.ci.tucson.az.us/>

Virtual Reference bibliography can be found at

http://www.lib.ncsu.edu/staff/jeboyer/virtual_reference.html

Wireless libraries can be found at

<http://people.morrisville.edu/~drewwe/wireless/wirelesslibraries.htm>

Appendix C - Service Area 2007 Population Calculation

1. The Southern Orange County population for 2000 was 84,147.
2. The Chapel Hill population for 2000 was 51,598.
3. The population in Southern Orange County outside of Chapel Hill for 2000 was therefore estimated at $84,147 - 51,598 = 32,549$.
4. The user group from the previous step that would use the Library was estimated at $32,549 \times 32\% = 10,416$.
5. 10,416 with a 2% growth for seven years was estimated at 11,965.
6. The Chapel Hill 2000 population of 51,598 with a 2% growth for seven years was estimated at 59,270.
7. The population served by the Chapel Hill Public Library for 2007 was therefore estimated at $11,965 + 59,270 = 71,235$.

Appendix D - Existing Library Technology

Library Computers By Department

Department	Name	OS	CPU	CPU Speed	RAM
<i>Administration</i>					
	mbayles	Windows 2000	Intel Pentium II	500-899 MHz	1
	dsayers	Windows 2000	Intel Pentium II	500-899 MHz	1
	kthompson	Windows 2000	Intel Pentium II	500-899 MHz	1
	Director's laptop	Windows XP	Intel Pentium III	900-1400 MHz	
<i>Public Services</i>					
	pjohnson	Windows 2000		900-1400 MHz	1
	lburcher	Windows 2000	Intel Pentium III	900-1400 MHz	1
	Checkout #4		Intel 386	20-89 MHz	
<i>Tech Services</i>					
	shagerty	Windows 2000	Intel Pentium III	900-1400 MHz	1
	mgoodrum	Windows 2000	Intel Pentium III	900-1400 MHz	1
	Tech Services common	Windows 95	Intel Pentium	90-165 MHz	
	TNS	Windows 95	Intel Pentium II	90-165 MHz	

Department	Name	OS	CPU	CPU Speed	RAM
<i>Children's Services</i>					
	kmichel	Windows 2000	Intel Pentium III	900-1400 MHz	
	Children's Desk 2	Windows NT 4.0	Intel Pentium III	300-499 MHz	
	Children's Desk 1	Windows NT 4.0	Intel Pentium III	300-499 MHz	
<i>Reference</i>					
	Reference 1	Windows 2000	Intel Pentium III	900-1400 MHz	
	Reference 2	Windows 2000	Intel Pentium III	900-1400 MHz	
	Smcclure	Windows 2000	Intel Pentium III	500-899 MHz	
	Ref/Chc Closet	Windows 2000	Intel Pentium III	900-1400 MHz	
	Infotrac	Windows 95	Intel Pentium	20-89 MHz	
	Print Station	Windows 95	Intel Pentium II	166-299 MHz	
<i>Public Access</i>					
	Gates Adult 2	Windows NT 4.0	Intel Pentium 4	1401-1600 MHz	
	Gates Adult 1	Windows NT 4.0	Intel Pentium 4	1401-1600 MHz	
	Gates CHC 1	Windows NT 4.0	Intel Pentium 4	1401-1600 MHz	
	Gates CHC 2	Windows NT 4.0	Intel Pentium 4	1401-1600 MHz	
	Internet 3	Windows NT 4.0	Intel Pentium III	300-499 MHz	
	Internet 4	Windows NT 4.0	Intel Pentium III	500-899 MHz	

Department	Name	OS	CPU	CPU Speed	RAM
<i>Public Access</i>					
	Internet 5		Intel Pentium II	166-299 MHz	
	Internet 7	Windows 95	Intel Pentium with MMX	166-299 MHz	
	Internet 9	Windows NT 4.0	Intel Pentium III	300-499 MHz	1
	Internet 6	Windows NT 4.0	Intel Pentium III	300-499 MHz	1
	Internet 8	Windows 95	Intel Pentium with MMX	166-299 MHz	
Total Number of Computers		31			

Appendix E - Plan Development Background

Strategic Information Management Services helped to prepare this plan via a Library Services and Technology Act (LSTA) grant administered by the State Library of North Carolina. Mark Bayles, Library Assistant Director, was the primary library contact during the development of this plan.

Strategic Information Management Services provides consulting services that help libraries and other information intensive organizations to plan, implement, and maintain information technologies. Contact information is:

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