Technology plays an ever increasing role in libraries and this technology plan assesses the current needs of the patrons and the library’s ability to meet those needs. The plan lays out the current status of the library’s network to include infrastructure, software and hardware as well as identifying current concerns and issues. From there a plan is laid out to get where we need to be in the short term as well as long term goals. Every technological change or addition must enhance the library’s offerings to its’ patrons or provide efficiencies to the staff.

Goals and realistic strategy for using telecommunications and information technology

To provide the citizens of Lawrence with an environment that provides sufficient learning resources on a daily basis. Given the physical and societal restrictions of the city we plan to broadcast events from the main library to the south branch and vice versa to ensure all of the citizens have an equal opportunity to view events sponsored at either library. There are often book readings, speakers, city events that are held at one location only and this plan will allow these events to be seen and allow interaction at either library location.

By upgrading and expanding the public access to computer resources the patrons will be able to utilize the resources of the Internet along with basic productivity software, including language learning programs.

In order to support these initiatives this technology plan is design to align the library technology resources with the city’s. This creates the opportunity to leverage procurement efficiencies of hardware and software. Staffs can be aligned to reduce redundancy and allow greater diversity in skill sets. To support these goals the following steps must be taken:

- Provide increased public access to computer resources
- Provide access to software for learning opportunities
- Identical technological offerings in both library branches
- Provide opportunities for distance learning and to share events live between the branch libraries, the school system and other towns
- A unified communication system between both library branches

Professional development strategy

There are various areas of professional development that need to be reviewed and each will be discussed below.
Currently there is no professional development planned or offered for network infrastructure equipment such as switches, router and servers. The City’s IT department has agreed to manage the library’s network infrastructure in the future provide the library uses the same manufacturer and similar hardware as the city current uses. Since the library currently has no official IT staff and does not anticipate being able to add anyone within the next few years this would be the prudent thing to do. The one individual who has been handing the library’s IT infrastructure is a librarian and he would like to continue on in a librarian career track rather than an IT career track.

The new desktop computers for the public access lab will have Windows XP and Office 2003 which the lab currently uses on some of the computers. No additional training is anticipated as being necessary for the reference librarians as there is no unfamiliar software being introduced. There

The public access lab computer reservation system will require training of both lab personnel and circulation desk personnel. This training will be provided by the vendor and will be conducted at the City’s training lab. There will be several sessions available in order to get the necessary personnel trained as well as anyone else who would like to be trained. Several staff members have already visited neighboring libraries to review their reservation system and discussed in detail pros and cons of the various software packages.

The new VOIP phone system training will be conducted by the City’s IT department. This training will be end-user level training and training is available monthly at the City’s training facility and as needed for new employees.

Assessment of telecommunication services, hardware, software and other services

Infrastructure: Both branches of the library are in the same situation in terms of wiring. The wiring infrastructure is currently non-existent. All computer cabling throughout the three story main branch and the two story south branch consists of patch cords, hubs and switches. This has grown from cabling several computers together many years ago to now connecting almost 70 computers in the main branch and approximately 20 computers in the south branch. Cables now snake around floors, are taped to walls, draped in drop down ceilings and cable tied to electrical cables. There is no wiring installed as infrastructure wiring.

Public Computers: There are seven public computers in the south branch and 26 in the main branch. These computers have been donated over the years and none of them are currently newer than four years old and most of them are five to six years old. In addition we have numerous manufacturers and operating systems and none of the computers are under warranty. We currently use parts from older computers to keep the computers running but this will not be viable much longer. There is no computer replacement plan in place and in addition patrons are able to add software to the computers forcing us to either remove the software or rebuild the computers on a regular basis.
Software: There are numerous versions of the same software packages operating on various computers depending on what the computer had for software when it was donated or purchased. Patrons have to be scheduled to different computers depending on the version of Microsoft Office that they need to use. In addition we are using several different operating systems, some of which are no longer supported.

Antivirus: Antivirus is either non-existent or out of date so computers get infected and have to be rebuilt.

Computer Reservations: The computer reservation system is a piece of paper maintained by the library staff. The signup for a computer can only happen once a patron shows up at the library and the wait can be several hours for a computer. Monitoring the amount of time a patron has used a computer is also recorded on a piece of paper.

Internet: There are no controls in place allowing us to abide by the Child Internet Protection Act. A staff member has to occasionally walk around and view what websites patrons are visiting. When an inappropriate website is being perused the staff must inform the patron that that is not allowed. Numerous complaints have been lodged by parents about what their children have been exposed to. While the library staff does their best to monitor the public computers and signs have been posted a software or hardware solution needs to be implemented.

Network: The network consists of two NT4 servers configured as a PDC and BDC and they are handling DHCP and file sharing. Microsoft no longer supports WindowsNT so if anything happens to the servers the library could be down and support is not available. There are no policies in place for applying updates to the servers or desktop computers and they are all out of date. The newest server is six years old and there is no hardware or software setup to perform backups on the servers. The public computers and the library staff computers are also on the same network which is a serious security issue. Most of the staff’s data is stored on their local machines and no backups are performed. A single hard drive loss will result in significant data loss. There is a single point to point DSL line to MVLC which supports both the library book system and Internet access for all of the computers.

Telecommunications: The current phone system is no longer supported by the vendor and we are unable to purchase new phones in the event of one of them breaking. In addition if the system goes down for any reason we may be unable to get it repaired and voicemail only works for some of the lines and is unreliable. The phone system does not span both libraries so we have one phone system at the main library and individual copper lines at the south branch.

Printers: The public computers have one network printer to share between them and all of the staff computers have numerous inkjet printers directly attached. The inkjet printers are from various manufacturers and are various models and require different cartridges which are expensive to order in small volumes. There is also no color printing available.
Budget resources

The city has agreed to cover any portion of project expenses not covered by e-rate for FY2009 and FY2010 as long as e-rate is approved. The budget includes hardware, software, personnel, contracted services and professional development. The breakout for the next three fiscal years is shown below.

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Ongoing evaluation process

The Lawrence Public Library evaluates the effectiveness of technology and technology resources to provide the patrons with a rich learning environment on an ongoing basis. One key evaluation criteria is the number of patrons who avail themselves of access to events via distance learning and video conferencing and how that number changes over the year. The second evaluation criteria will be the length of the wait for computers as well as the number of patrons utilizing the computers. We have current usage figures so we can compare them against the future usage on an ongoing basis. That will allow use to modify our plan as needed to support our patrons. This technology plan will be evaluated during budget season and after budget approval and it will also be re-evaluated if any grants become available. At each phase in the plan the appropriate library and IT staffs will meet to review both the previous phase and the next phase to ensure that the plan is in alignment with the current needs and available technology. As necessary the library board will be involved in the discussions and decision making process. By reviewing the previous phase, issues will be identified and corrected as needed and the lessons learned can then be applied to the next phase of the project.

The review of the next project phase will consist of implementing the lessons learned from the previous phase and re-evaluating the technology and goals of the project. With the constantly changing technology available this evaluation will ensure that the best solution is implemented at that time. The review will look at what other...
libraries are offering and implementing, current requests from patrons as well as input from contracted consultants.

With the major changes that this technology plan proposes another evaluation tool will be a survey of the patrons to determine their overall satisfaction with the new changes and to solicit their input for future changes. Once the initial phases are complete the network health and robustness will also be measured utilizing industry standard monitoring and evaluating products and techniques.

**Current Situation**

**Goal:**

Detailed below in various phases is an overview plan to move the library from its’ current state to a state of the art facility providing the citizen’s of Lawrence a unique learning opportunity. The library network has been cobbled together with a variety of components, manufacturers, grants and donations over the years. It needs to be rebuilt from the ground up and equipment and software standardized. Once that has been completed we will then be in a position to move beyond the break-fix situation we are in now and to be able to provide the citizens of the city with a true learning environment.

**Project Plan:**

**Phase I:**

The first thing to be completed is to install infrastructure wiring in both branches of the library. Without the appropriate wiring infrastructure any improvements would have a minimal impact. By wiring both locations we provide the necessary infrastructure to support not only the existing systems but all newer systems to include phones. In addition we need to add network drops to locations throughout the library that do not currently have any network access. To support these drops we need to add network switches and routers and remove the existing hubs and routers sitting on the floors. We will need to build data closets with UPSes and appropriate cooling. Also, electrical wiring will need to be run to the data closets and the lab areas. We need to eliminate all the extension cords and power strips that are currently necessary. Once this is completed all existing servers, computers and printers can be shifted to the new infrastructure. The City has provided a fiber link between the two libraries so we will have communication between the buildings. With the new infrastructure in place the public and staff portions of the network can be separated in Phase II which will enhance security.

**Phase II:**

The servers need to be replaced and the operating system upgraded to Windows2003 server. Windows NT is no longer supported nor do any new applications run on this operating system. We can leverage some of the existing city servers for e-mail but we will need a file server, print server, DHCP server, DNS server and a domain.
controller. If we integrate with the City’s domain we can leverage some of their domain controllers for redundancy and potentially share in other hardware and software initiatives thus saving money for both the city and the library.

By integrating with the City’s domain we can share Internet access and utilize the City’s website monitoring and blocking software. By utilizing this software the library can comply with the Child Internet Protection Act.

We need to purchase anti-virus software for both the servers and the existing desktop computers. We should not upgrade any of the desktop operating systems or existing software (other than the anti-virus software) until we upgrade the computers themselves as they will not support current software.

Integrating into the City’s domain will allow the library to leverage the existing backup solution. Data from both servers and desktops will be backed up preventing data loss.

The city has agreed to allow the library to utilize the existing city VOIP phone system. The library will need to purchase the necessary phones and licenses and will share in a portion of the maintenance of the VOIP servers. This will give the library 4-digit dialing between the branches and to all municipal buildings which will save on phone costs as these would now be internal calls. The library will also have access to voicemail, call transfers, conference calls, caller ID, etc. which the current phone system does not support. Since all external VOIP calls are routed through PRI lines all the existing copper lines can be cancelled. The library will pay a portion of the cost of the PRI lines which is less expensive than maintaining all of the copper lines.

Phase III:

The computers and printers throughout the library, staff and public, need to be replaced. In addition, current software needs to be purchased and installed. Replacing the staff computers will not be difficult but before the public computers are replaced the electrical situation needs to be rectified. Outlets need to be added to support the computer labs thereby eliminating power fluctuations and tripped circuit breakers. This will also allow the removal of the numerous extension cords throughout the labs. Once that has been completed new computers for the computer labs can be installed.

The majority of the printers in use are individual inkjet printers and they all use different cartridges. Those all need to be removed and several high volume laser printers installed in central locations around the library. These will be less expensive to operate than the inkjet printers and print 35ppm instead of the current 3 to 4ppm.

The public should be able to reserve a computer online and not via a paper signup sheet. A multi-lingual application needs to be implemented allowing local and, ideally, online signup as well. The application should also provide a means to print both black and white as well as color. Access also needs to be restricted to patrons with a valid library card.

Phase IV:

Due to the nature of the city, patrons visit the main branch or the south branch but usually not both. A video conferencing or distance learning system would allow the library to host functions, speakers, story hour, etc. at one location and allow the patrons.
to participate from another location. We should also be able to tie-in to events being held at other libraries, museums, schools or other venues and allow real-time participation. By acquiring a recording element with a video conferencing system the library could then either host the same event on other nights or allow patrons to watch the event through a web stream from either the public library computers or from outside the city network.

**Conclusion:**

By implementing these phases we can systematically move the library’s technological base forward. Each phase builds upon the work completed in the prior phase so each phase must be completed before moving on to the next phase. The existing infrastructure must be replaced before any new or expanded technology can be implemented. Once we have the proper infrastructure in place we can support any technology initiative in the foreseeable future. The current infrastructure will not even support VOIP or video conferencing never mind future technology. This technology plan will be reevaluated at least twice a year; during budget season and after budget approval.

Submitted By:__________________________

Printed Name:__________________________

Title:__________________________

Date:__________________________

Approved:__________________________

Printed Name:__________________________

Title:__________________________

Date:__________________________