Technology Plan

Fiscal Years 2022-2024

August 2021

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Abstract

This Technology Plan seeks to provide the users and staff of the Villa Park Public Library with a plan for the effective and efficient utilization of current and future technologies. The Library's use of these technologies is in direct support of its statement of purpose:

> "…to provide access to the universe of information and to make as much of this universe as is of immediate relevance and interest maximally accessible to the residents of Villa Park…."

Policy 101: Statement of Purpose

Specific objectives are detailed below in relation to the fiscal year for which they are planned.

Technology Vision Statement

The Villa Park Public Library sees automation as an extremely important tool for enhancing the delivery of library services and wants to utilize this tool in every possible way that is affordable to an organization operating within the constraints of tax-cap funding. In coming years, the Library hopes to use automation in extending patron self-service in the areas of circulation, reference and information (currently we offer self-searching of the Library holdings catalog, other automated databases, including the Internet, and selected online and CD-ROM products). We will use automation to enhance collection development (providing reference and periodical titles in automated format, plus the imaging of documents such as local newspapers and local information files). We will use automation for communication and training purposes, inside and outside the organization; for record keeping; and for the acquisition and processing of library materials. In many of these activities, we will join with the other public library members of the System Wide Automated Network (SWAN), which will allow us to be more cost-efficient, while improving accuracy and timeliness, and also reducing effort. We look to our membership in SWAN as an opportunity to share our resources and also to build on our resources through the contributions of others--to bring all these resources within easy, affordable access of our patrons as quickly and smoothly as possible.

Technology Assessment/Inventory (Current)

As stated in the Technology Vision Statement, the Library is currently a member of SWAN. This consortium consists of 101 public, academic, and special use libraries and uses SirsiDynix as its automation vendor. SWAN personnel at the SWAN office located in Westmont, Illinois, manages and maintains the SirsiDynix system hosted in the Microsoft Azure cloud as well as an array of network and software services for member libraries. SWAN is funded by tiered monthly automation fees from member libraries.

SirsiDynix's software includes circulation, cataloging, and the public access catalog, and provides staff access to the consortium's bibliographic and patron databases. As a member of Online Computer Library Center, Inc. (OCLC), the Library contributes to a national database of bibliographic records and utilizes the records from this database.

Digital Reference & Electronic Resources

Patrons have access to the Library's browser-based public access catalog both within and outside the library. The catalog also provides access to the following electronic resources:

- Booklist Online
- Britannica
  - Encyclopædia Britannica
  - Spanish Resource Center
- Consumer Reports
- Creativebug*
- Culturegrams
- EBSCO
  - Academic Search Premier*
  - Auto Repair Source*
  - Business Source Premier
  - ConsumerReports.org
  - Consumer Health Complete
  - History Reference Center*
  - Literary Reference Center*
  - MasterFile Premier
  - Middle Search Plus
  - Novelist Plus & Novelist K-8 Plus
  - Points of View Reference Center*
  - Primary Search
  - Science Reference Center*
  - Home Improvement Reference Center*
  - Small Business Reference Center*
  - Small Engine Repair Reference Center*
  - Vocational & Career Collection*
- eRead Illinois
- Financial Ratings Series
- Gale/Cengage Learning (includes the following)
  - Encyclopedia of Associations
  - Gale Virtual Reference Library
- Hoopla
- Medigap Buyer's Guide
- Morningstar Investment Research Center
- MyMediaMall
- NewsBank (includes the following)
  - Chicagoland Newspapers (Chicagoland newspapers, Villa Park Suburban Life, State Journal-Register)

- o   Chicago Tribune Historical Archive
- o   America's News Magazines
- o   America's Obituaries & Death Notices
- o   America's GenealogyBank
- Niche Academy*
- OCLC
    - o   FirstSearch
    - o   WorldCat
- ProQuest
    - o   Ancestry Library
    - o   Chicago Tribune
    - o   HeritageQuest Online
    - o   ProQuest Obituaries
    - o   US Newsstream
- Record Information Services
- ReferenceUSA
- Transparent Languages
- Tumblebooks Library*

* New subscription in 2019/2020

In April 2020, SWAN entered into an agreement with EBSCO to purchase database titles at a discount for all public libraries in the consortium. This reduces the Library's cost for several existing product and adds several new ones.

In addition to the subscription databases listed in the Digital Reference & Electronic Resources section, the Library has also invested in e-reference titles through the Gale Virtual Reference Library. These are reference e-books that the Library has purchased to replace a number of print reference series as they become out of date. GVRL titles are accessible through a Gale website and are linked through the Library's online catalog.

Downloadable eBooks, audiobooks, music, and videos are searchable through several platforms, including Axis 360 (branded as eReadIllinois), the Overdrive and Libby apps (together branded as Digital Library of Illinois), and Hoopla. These resources are collectively branded "eLibrary" on the Library's website and many collections are searchable through the SWAN Enterprise catalog.

The Library has made remote access available to patrons for electronic resources whenever possible. Currently, all electronic resources except Ancestry Library allow usage via the Internet using a Web proxy service managed by SWAN. The Library has integrated remote access to include the FirstSearch database made available by the Illinois State Library.

The Library currently provides access to the Internet at 28 staff workstations, 12 public workstations located in Adult Services, and 8 public workstations located in Youth Services. 19 of these public workstations (11 in Adult Services and 8 in Youth Services) have both Microsoft Office products and access to the Internet (including the online electronic resources referenced above). There is 1 Express Station in Adult Services providing access only to the Internet, limited to 15-minute sessions. In addition, 3 games stations located in Youth Services offer children access to recreational media. Youth Services also offers several iPads for checkout dedicated to early literacy software for preschool through third grade patrons. As of mid-2020, due the ongoing COVID-19 (novel coronavirus) pandemic and the need to provide social distancing within the building, certain computer availability has been temporarily limited, including some internet computers and youth gaming stations.

Wireless Internet access and wireless printing are available to patrons. Multiple access points provide coverage throughout the building on a network that is separated from the main network by the firewall. An outdoor wireless access point was added in April 2020 to provide coverage in the parking lot while the library was closed to the public.

As of early 2020, the Library is running a mixture of Windows 7 and Windows 10 operating systems, upgrading as computers are refreshed and new equipment deployed. Currently, most staff stations are Windows 7, internet stations in Adult Services are Windows 10, and new PCs to be deployed this year for patrons in Youth Services will also use Windows 10. Any new desktop computers purchased will normally include licensing for the most recent version of Windows.

The Library has begun acquiring a collection of popular tablet and e-reader devices from leading manufacturers. These are intended both for public circulation and for staff to gain experience and familiarity supporting the Library's downloadable media services on devices patrons are likely to own. These are currently available for checkout.

Hardware Owned

The following is a list of equipment currently owned by the Library as well as a list of the functions of the workstations:

Servers & Network Equipment

4	Dell file servers

         1 – 16-core 2.30 GHz Xeon server with 2400 GB disk array, 48GB of memory (purchased 2020)
         1 – Dual 8-core 2.10 GHz Xeon server with 2400 GB disk array, 64GB of memory (purchased 2018, upgraded 2021)
         1 – 8-core 2.40 GHz Xeon server with 2400 GB disk array, 32GB of memory (purchased 2016)
         1 – 6-core 2.00 GHz Xeon server with 900 GB disk array, 32GB of memory (purchased 2014)

1	Barracuda Backup 390 disk/cloud backup appliance (purchased 2020)
1	Synology DiskStation DS214+ Network Attached Storage (NAS) device
1	Network Router (owned by LINC)
2	Sonicwall network security firewalls (purchased 2015, 2011)
35	Wireless access points

         1 – Cisco Meraki MR74 outdoor access point (purchased 2020)
         24 – Cisco Meraki MR45 access points (purchased 2019)
         4 – Linksys wireless "G" access points (purchased 2008)
         2 – Linksys wireless "G" access points, formerly used as Annex wireless bridge (purchased 2008)

4	48-port network switch
6	24-port network switches
3	5-port switches
1	Networked KVM switch
1	Video surveillance system, including 15 IP cameras, network video recorder
1	ShoreTel Unified Communications telephone and voicemail system
1	Luxer One outdoor locker system

Computers & Laptops

73	Windows PCs (includes obsolete pending disposal and new to be deployed)
20	Laptop computers

         1 – Dell Latitude E6520 (purchased 2011)
         1 – Dell Latitude E6520 w/docking station (purchased 2012)
         2 – Dell Latitude E6540 (purchased 2014, 2015)
         8 – Dell Latitude 5590 (purchased 2018)
         2 – Dell Latitude 5500 (purchased 2020)
         5 – Dell Latitude 5510 (purchased 2020)
         1 – Dell Precision 5550 (purchased 2020)

3	iMac computers
1	Mac Mini computer
1	BookScan Station
3	Centec self-checkout stations

Tablets & E-reading Devices

6	Apple iPad tablet
1	Microsoft SurfacePro tablet
3	Amazon Kindle tablet/reader
1	Amazon Fire tablet/reader

Copiers

1	Konica Minolta Bizhub C450i color copier/printer (purchased 2021)
1	Konica Minolta Bizhub C458 color copier/printer (leased 2018 to 2019)

1	Konica Minolta Bizhub C3351 color copier/scanner/fax (purchased 2017)
1	Canon ImageRunner Advance C357 copier/fax (purchased 2021)
1	Canon ImageRunner Advance C356 III copier/fax (purchased 2020)

Printers, Scanners, Peripherals

8	Black & white laser printers
3	Color laser printers
2	Large format color inkjet printer
13	Thermal receipt printers
1	Cordless receipt printer
1	Color flatbed scanner
21	Metrologic/Honeywell handheld laser barcode scanners
1	Cordless handheld laser barcode scanner
2	Computype Replicator Label Genius GX430t barcode duplicator/printer
1	Zebra Technologies TLP 2844 bar code duplicator

Audio/Video Equipment

4	LCD/DLP Video projectors
2	Digital cameras
1	Digital SLR camera, lenses & accessories
1	Digital video camera
2	Audio mixing board/sound rack
9	Large (40" – 75") Smart TVs
1	Large (42") LCD display
1	19" LCD TV
1	Apple TV
2	BrightSign digital signage devices
2	Blu-Ray players
2	DVD players
1	VHS/DVD recorder
1	VCR
2	A/V receivers
1	Xbox One X console
1	PlayStation 4 console

Digital Media Lab Equipment

1	LulzBot TAZ 3d printing system
1	DJ turntable
1	Keyboard
1	Electronic drum controller
1	Guitar tuner/metronome
1	Creative pen tablet
1	Super 8 film to digital converter
1	Video capture interface
1	CD-R turntable

Hardware Leased

1	Konica Minolta Bizhub C258 color copier/printer (leased 2017 to 2022)
1	Pitney Bowes SendPro C200 postage meter (leased 2018 to 2023)

Workstation Operations

5*	Adult Services PACs (Public Access Catalogs)
4*	Youth Services PACs (Public Access Catalogs)
12*	Adult Services Internet workstations (11 with MS Office, 1 is Express)
8*	Youth Services Internet workstations
3*	Youth Services gaming workstations
2	Print release stations
1	Microfilm station
20	Laptops
28	Staff workstations
11	Workstations in storage or being deployed

* Actual availability is temporarily reduced from these figures due to COVID-19 restrictions as of August 2020

Software

Workstations have either Microsoft Windows 7 Professional or Windows 10 Pro installed as the operating system. The Library is replacing Windows 7 with Windows 10 as new PCs are purchased. Microsoft Office Professional and SirsiDynix Workflows are available at all staff workstations. The Print Shop version 15 and Adobe Creative Suite are available on select workstations. Microsoft Office 2013 is also available on Internet stations and word processing stations for patron use. All Library computers, with the exception of machines used for digital signage and games stations, have Symantec Endpoint Protection for virus and security protection.

Non/Capital Equipment Replacement Schedule

Equipment	Type	Qty	Purchase Date	Life (yrs)	Replace
Dell PowerEdge 740	Server	1	11/14/2018	5	2023
Dell PowerEdge 440	Server	1	10/23/2020	5	2025
SonicWall NSA 3600	Firewall	1	11/11/2015	7	2022
HP 1920-48G-PoE+	Switch	1	10/2/2015	7	2022
Cisco 2960X-24TS-L	Switch	1	10/2/2015	7	2022
Cisco 2960X-48LPS-L	Switch	1	4/17/2017	7	2024
Cisco 2960X-24PS-L	Switch	1	4/13/2018	7	2025
Cisco 2960X-24PS-L	Switch	1	10/18/2018	7	2025
Cisco 2960X-24PS-L	Switch	1	10/18/2018	7	2025
Cisco 2960X-24TS-L	Switch	1	2/12/2019	7	2026
Cisco 2960X-48FPS-L	Switch	1	8/9/2019	7	2026
Cisco 2960X-48FPS-L	Switch	1	8/29/2019	7	2026
HP ProOne 400	PC	6	9/25/2015	5	2020
Dell Optiplex 3030 AiO	PC	12	5/27/2016	5	2021
Dell Optiplex 5050	PC	2	3/24/2017	5	2022
Dell Optiplex 5050	PC	11	9/7/2017	5	2022
Dell Optiplex 5050	PC	6	12/6/2018	5	2023
Dell Optiplex 5070	PC	6	11/27/2019	5	2024
Dell Optiplex 5080	PC	10	12/3/2020	5	2025
Dell Optiplex 5270	PC	8	1/9/2020	5	2025
Dell Alienware Aurora	PC	3	3/26/2018	5	2023
Dell Latitude 5590	Laptop	8	12/6/2018	5	2023
Dell Latitude 5500	Laptop	2	3/13/2020	5	2025
Dell Latitude 5510	Laptop	5	8/21/2020	5	2025
Dell Precisiton 5550	Laptop	1	11/3/2020	5	2025
Konica Minolta Bizhub C3351 - Circulation Workroom	Copier	1	2017	7	2024
Konica Minolta Bizhub C258 - Adult Services	Copier	1	2017	7	2024
Konica Minolta Bizhub C458 - Copy Room	Copier	1	2018	7	2025
Konica Minolta Bizhub C450i - Materials Services	Copier	1	2021	7	2028
Canon ImageRunner Advance C356 - Adult Services	Copier	1	2020	7	2027
Canon ImageRunner Advance C357 - Business Office	Copier	1	2021	7	2028

Subscription, Maintenance, and Contract Schedule

Villa Park Public Library
Vendor Contract Status

Modified: 8/17/2021

	2021	2022	2023	2024	
		J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	
Non-Capital Outlay/Software					
Sophos Intercept-X	5/12/2021				
Adobe Creative Cloud	1/29/2021				
Deep Freze	6/23/2020				
Automation Services					
SonicWall	12/1/2019		(New 3-year agreement?)		
VMWare	2/21/2020		(New 3-year agreement?)		
Meraki	9/4/2019				9/2/2027
TBS MyPC/PaperCut	June 2021	(Lease) (Maintenance only)			6/1/2025
TBS ePrintIt/vend	5/1/2021				4/30/2025
Promo Receipt	July 2021				
Barracuda Email	2/8/2020		(New 3-year agreement?)		
Barracuda Backup	11/1/2020				11/1/2025
GoDaddy Hosting	9/21/2020				
Maintenance of Equipment					
TBS Scan station	Oct. 2021				
Self-Checkouts	July 2021				
Microfilm scanner	Aug. 2021				
Sound Inc Support	2/1/2021				
Sound Inc - Partner	Oct. 2021				
Broadband Services					
AT&T ASE	9/3/2020				
Comcast cable	1/28/2019				
Mobile Beacon	July 2021				

Accomplishments in 2019-2021

The Library underwent a major expansion & renovation project in 2018-2020, with a grand opening in October 2019, adding over 9,000 square feet and completely renovating the existing 1969 building. The renovated building is designed and equipped to handle the needs and challenges of emerging technology:

- For the first time, the Library now has a dedicated server/network room with dedicated HVAC and increased physical security. This room includes newly-installed demarcation points for copper, fiber, and cable telecommunications services providers (currently AT&T and Comcast).
- Library staff worked with the architects to identify extra locations for both electrical and network wiring in public and staff areas, to allow flexibility in adding or moving technology to different locations in the future.
- All network cabling is Category 6 Enhanced Ethernet rated, an upgrade from the old building
- The wireless network was upgraded from 4 access points to 24 access points for greater coverage using a Meraki cloud-managed solution supporting higher data rates and the latest WiFi standards. The new network provides strong coverage across the building with the capability to support hundreds of users simultaneously. The Library also added an outdoor wireless access point to provide additional internet access to patrons in the main parking lot
- Video surveillance is now IP-based with a central network video recorder (NVR). Additional cameras were added to increase coverage in July 2021.
- As part of the project, the Library upgraded all network switches to gigabit Ethernet with power-over-ethernet (PoE) capability
- The Library has replaced all virtual servers running Windows 2008/Windows 2008 R2 operating systems with Windows Server 2019, the most recent operating system currently supported by Microsoft that will continue to receive feature and security updates. Automation staff have completed migration of one domain controller/DNS/DHCP server, interim network backup server, primary file server, and accounting software server to new virtualized Windows 2019 servers.
- The Library purchased and deployed a disk/cloud-based Barracuda network backup appliance to replace the server-based BackupExec system
- The Library upgraded its current Symantec Endpoint Protection server and client software to a new version supporting current editions of Microsoft Windows 10. Library staff also evaluated alternative long-term options for antivirus software and selected cloud-managed Sophos Intercept X Advanced to deploy in 2021.
- A chat widget was added to the Library's website during the COVID-19 closure to allow patrons to quickly get questions answered by staff
- The Library has purchased and installed an outdoor locker system allowing self-service holds pickup 24 hours/day
- Automation staff created and supported work-from-home infrastructure for Library staff during the ongoing COVID-19 pandemic, allowing the Library to continue operations and serve patrons remotely
- Library staff are working with Current Technologies to configure and deploy the Sophos endpoint protection solution to replace Symantec Endpoint Protection on Library computers

Remaining Projects in FY2021

- The Library has purchased additional Windows 10 All-in-One PCs that are being prepared as Youth Services internet stations. Additionally, a variety of new tablet devices are being purchased to replace aging hardware
- The Library plans to purchase new licensing and upgrade Microsoft Office on all workstations to 2016 or 2019 versions during 2021.
- The Library is evaluating long-term solutions to its telephone needs as voice technologies evolve in the marketplace. Staff are working with current voice provider Sound Incorporated to explore service provider options and necessary hardware to integrate with the existing on-premises phone system

Technology Needs Assessment (Community and Library Needs)

Telephone System

In 2016, the Library replaced its aging telephone and voicemail systems with a new Voice-over-IP (VOIP) and integrated voicemail system. In deference to budgetary realities, the Library made the decision to maintain the current four (4) analog POTS (Plain Old Telephone Service) lines to connect to the system from our voice carrier (currently CallOne). While POTS lines are historically very reliable, costs have risen dramatically in recent years and it is widely understood that AT&T plans to migrate away from legacy copper infrastructure in their central offices within the next decade. Other options should also be considered either as a component of or in the absence of any future building renovation/expansion plan:

- An ISDN PRI line is a type of digital service that can handle multiple incoming calls on a single pair of copper or fiber. One line can support up to 23 simultaneous calls, without needed separate outside phone numbers, and offers more advanced routing features than we have currently.
- A SIP trunk is a connection that uses VOIP technology as described above, but connects to the service provider. In other words, the phone service comes in through the internet itself instead of through separate phone lines. This is similar in concept to Comcast Voice or AT&T U-Verse in residential use.

Either type of digital trunk would provide advantages, features, and more flexibility than is currently available through legacy analog service, but would require additional investments in hardware as well as possible increased service costs. The Library will continue to monitor pricing from our current voice provider for implementing ISDN PRI service over fiber, as well as options from other providers such as Comcast, and staff will make a recommendation when it becomes cost-effective to replace the POTS service with a different product. Any change in the trunk service will necessitate replacing the Shoretel voice switching hardware with different equipment.

Internet Connectivity

The Library currently maintains two connections to the internet:

- Metro Ethernet/fiber lines to the Illinois Century Network (ICN) with a bandwidth of 3 Mbps, primarily used for connectivity to SWAN and the Sirsi ILS.
- Comcast Business cable service at 300 Mbps downstream and 25 Mbps upstream. This is the primary patron and staff internet bandwidth.

In 2015, the Library upgraded its ICN internet connection from AT&T T1 lines to Switched Ethernet Service over fiber optic lines. At the time, the Library expected to increase ICN bandwidth to 10Mbps, but the cuts to the Illinois state budget eliminated all free bandwidth allotments from ICN. Bandwidth and usage must continue be monitored to ensure the Library is meeting the needs of today's and tomorrow internet and media applications. In 2019, the Library increased the Comcast connection speed to 300Mb/s to provide needed bandwidth for patron and staff internet usage. AT&T and Comcast both installed new demarcation points and equipment as part of the Library's 2018-19 construction project.

Library staff will continue to monitor current market trends for internet and voice service. Recently, the State of Illinois has established K-12 broadband network[1], which is available at no cost to public schools, and to libraries at a 90% discount through federal E-rate funding. The Library may consider this network, or other competitive bids for broadband services using E-rate funding. However, acceptance of any E-rate funding requires compliance with the federal Children's Internet Protection Act (CIPA). CIPA imposes a number of technological and policy requirements on schools and public libraries receiving federal funding:

> *Schools and libraries subject to CIPA may not receive the discounts offered by the E-rate program unless they certify that they have an Internet safety policy that includes technology protection measures. The protection measures must block or filter Internet access to pictures that are: (a) obscene; (b) child pornography; or (c) harmful to minors (for computers that are accessed by minors). Before adopting this Internet safety policy, schools and libraries must provide reasonable notice and hold at least one public hearing or meeting to address the proposal.[2]*

Schools and libraries are required to implement an internet usage policy requiring the filtering of "obscene" and "harmful" material on computers accessible by both children and adults, and also disable that filtering for adults "bona fide research or other lawful purposes"[2] on request. In addition to the cost of implementing filtering software and staff time and training to operate it, there are also civil liberties and intellectual freedom concerns to take under consideration. The American Library Association website[3] provides further information on these issues.

References:

1) https://www2.illinois.gov/icn/projects/k12network/Pages/default.aspx
2) https://www.fcc.gov/consumers/guides/childrens-internet-protection-act
3) http://www.ala.org/advocacy/advleg/federallegislation/cipa

Specific Goals for Meeting Future Technology Needs

As stated in its Vision Statement, the Library views automation as a tool for enhancing the delivery of library services. Specific goals include:

- Providing personalized service through electronic means – assisting patrons with PINs, TXT reference, email notifications, electronic readers' services.
- Incorporate electronic forms on the Web site in order to expand reference services to patrons.
- Reorganize and expand the Library's Intranet.
- Provide electronic resources in the most cost-effective manner; i.e. subscription Internet sites, government Web sites, CD-ROMs. Determine feasibility of offering remote users access to additional products.
- Provide ongoing training for Library staff, Board, and public (see following section).
- Cooperate with other libraries, government entities, and other agencies to pool resources.
- Plan and implement hardware and software upgrades to fileserver, workstations, and security equipment.
- Utilize wireless technology as a supplement to the Library's existing network, thus providing staff and patrons the benefits of this mobile automation tool.
- Respond to all trouble reports in a timely, cost-effective manner. Department goal is to respond within two days.
- Integrate online payments options for public programs

Staff Core Competencies

As technology permeates all levels of the Library's operations and services, every staff member must be comfortable using applications, computers, and other equipment. A core of technology competency is required of all staff members, to contribute to the overall effectiveness of the organization, whether they work behind the scenes or interacting with the public. As more Library services are available electronically and through the internet, it is essential that all staff have the necessary training to assist and advise patrons on the use of Library technology, software, and services, both in the Technology Center and using personal devices such as laptops, tablets, and smartphones. Staff members are required to meet the staff core competencies.

SWAN personnel provide basic training for the Library staff on SirsiDynix functions. The Library provides additional one-to-one SirsiDynix training for new staff. Money is allocated for staff training and continuing education. Staff are encouraged to attend technology/computer workshops and classes either online or in person. The Library maintains a subscription to Niche Academy, a service available to patrons and staff offering web-based video courses on a variety of software products, web technologies, and professional development topics. The Virtual Services Librarian will continue developing a set of core competency standards for all staff. Professional development workshops are also available to staff through library organizations such as RAILS, LACONI, SWAN, and ILA.

Specific Strategies (Action Steps) / Timetable / Budget

Fiscal Year 2021 (in progress)

The Library plans to act on the following items in FY2021. Specific costs are itemized in the table below, and may include a 5% projected cost escalation from previous years.

- Purchase approximately 13 desktop computers and monitors as part of the technology replacement cycle.
- Renew software license agreements with Symantec (antivirus), Adobe (Creative Cloud), Faronics, Sage Accounting, and Public Web Browser.
- Upgrade licensing to current version of Microsoft Office (2019) for all library computers
- Add additional Deep Freeze licenses for Youth Services internet computers
- Migrate from Symantec to Sophos Intercept-X Advanced for endpoint protection
- Renew maintenance agreements for self-checkout, wireless printing service, TBS Scan Station, microfilm scanning station, network infrastructure, and phone system
- Pay the 5th of 5 installments on the Library's PC Reservation and print release system with MyPC and PaperCut products, respectively. The cost listed reflects a 5-year payment plan, including annual maintenance coverage
- Replace the Bizhub C454 and Buzhub 224e copiers with new equipment (construction funding)
- Add additional large-format printer on the 1st floor (construction funding)

Technology costs are itemized below. The budget column reflects the approved 2021 annual budget, and may be different than the sum of enumerated items for some accounts:

Non-Capital Outlay/Cabling or Wireless solutions	01-02-5540	$500.00
Non-Capital Outlay/PCs and Monitors	01-02-5500	$18,000.00
Non-Capital Outlay/Hardware replacements	01-02-5530	$3,000.00
Non-Capital Outlay/Server Upgrades	01-02-5550	$7,000.00
Non-Capital Outlay/Software Upgrades • Sophos AV[8] - $4,435 • Adobe CC - $1,920 (2 seats) • Faronics / Deep Freeze[1] - $570 • Sage Accounting - $1,300 • Public Web Browser[2] - $125 • NinjaForms - $50 • Microsoft Office - $4,100	01-02-5520	$9,000.00
Contractual/Automation Services • Sonicwall maintenance[3] - $0 • VMWare maintenance - $0[3] • Meraki WiFi management - $0[4] • MyPC/PaperCut - $1,720 • Wireless printing/vending maintenance - $1,220 • EventKeeper - $1,200 • StoryBlocks & DesignBold (graphic stock) - $220 • Beanstack (reading program) - $900 • MyPromo receipt software - $230 • Barracuda Essentials for Office 365 (security & compliance)[5] - $0 • Barracuda backup updates & cloud storage[6] - $0 • Web hosting & SSL certificate - $0[7]	01-01-5103	$5,490.00
Contractual/Automation-Monthly (SWAN) • Automation monthly charge - $36,000	01-01-5101	$40,000

Contractual/Broadband Services • AT&T fiber circuit - $3,168 • IL Century Network Internet - $350 • Cable Internet - $2,700 • Mobile broadband - $1,372 (6 @ $120, 2 @ $325.80)	01-01-5105	$8,000.00
Contractual/Technology Services • Technology consulting/contracting - $3,000	01-01-5125	$3,000.00
Contractual/OCLC	01-01-5104	$0.00
Contractual/Rental/Lease • KMBS Bizhub C258 @ $138.35/month * 12 months • Postage meter @ $53.02/month * 12 months	01-01-5102	$2,500.00
Buildings & Contingency/Maintenance of Equipment • TBS Scan Station maintenance - $855 • Cisco maintenance - $0 • Copier maintenance/consumables - $5,000 • ScanPro maintenance - $695 • Self-check maintenance - $2,990 • Telephone system maintenance - $1,050	01-01-5236	$10,500.00
Utilities/Telephone[4]	01-01-5202	$5,350.00
Total Technology Costs--FY 2021		**$112,340.00**

[1] Cost reflects a 3-year service term purchased in 2020

[2] The Library is currently able to license Public Web Browser at no cost through the RAILS system. Since the current agreement through RAILS is renewed annually later in the year, the cost to renew for VPPL is reflected here as a contingency

[3] In 2019, the Library renewed its SonicWall security firewall service with a 3-year service plan that provides long-term savings. The device is scheduled to be replaced in 2022

[4] Cost reflects a 7-year service term purchased in 2019

[5] Cost reflects a 3-year service term purchased in 2020

[6] Cost reflects a 5-year service term proposed in 2020

[7] Cost reflects a 2-year service term purchased in 2020

[8] Cost reflects a 3-year service term purchased in 2021

FY2021 Project Funding

The Library has purchased the following technology items in 2021 from construction project funds:

• Konica Minolta C450i multifunction copier (Materials Services)	$10,700
• Canon C357 iF multifunction copier (Business Office)	$3,897
• Canon imagePROGRAF PRO-4100S large-format printer	$4,900
• HP LaserJet Pro M227fdw multifunction printer (Library Director)	$290
• Tripp-Lite Keyboard/Video/Monitor switch & cables for server rack	$2,351
• Apple iPad keyboard	$149
• Server memory upgrade	$202

Fiscal Year 2022

The Library plans to act on the following items in FY2022. Specific costs are itemized in the table below, and may include a 5% projected cost escalation from previous years.

- Purchase approximately 16 desktop computers, laptops, and monitors as part of the technology replacement cycle.
- Purchase and/or replace tablet and e-reader devices as needed
- Replace two network switches as part of the technology replacement cycle
- Replace and upgrade the network firewall including a multi-year service agreement
- Renew software license agreements with Adobe (Creative Cloud), Sage (accounting software), and Public Web Browser.
- Renew service agreements with Library Calendar, Beanstack (summer reading system), Cen-Tec (promo receipts), TBS (wireless printing service), GoDaddy (web hosting)
- Renew maintenance agreements for self-checkout, computer reservation, print release and vending units (2), BookScan Station, digital microfilm reader, and phone system
- Existing contract agreements continue with Sophos (endpoint protection), Faronics (Deep Freeze), VMWare (server virtualization), Meraki (WiFi cloud management), Barracuda (email security & network backup)
- Exercise the $1 buyout option on the Bizhub C258 copier, currently in the Technology Center
- Replace one coin/bill vending unit at end-of-life with new equipment, including credit card capability
- Library staff will evaluate and select new telecommunications service provider(s) to replace existing telephone service for voice, fax, credit card, and emergency services. These may include digital (PRI) and wireless solutions, as well as associated hardware required to integrate with the existing Mitel voice system.

Technology costs are itemized below. The budget column reflects a projected annual budget, and may be higher than the sum of enumerated items for some accounts:

Non-Capital Outlay/Cabling or Wireless solutions	01-02-5540	$500.00
Non-Capital Outlay/PCs and Monitors (includes tablet devices)	01-02-5500	$18,500.00
Non-Capital Outlay/Hardware replacements • Firewall replacement/3 years service - $6,000 • Switch replacements - $5,000 • Coin/bill/credit vending unit - $3,800	01-02-5530	$14,800.00
Non-Capital Outlay/Server Upgrades	01-02-5550	$0.00
Non-Capital Outlay/Software Upgrades • Sophos AV - $0[1] • Adobe CC - $1,920 (2 seats) • Faronics / Deep Freeze - $0[2] • Sage Accounting - $1,350 • Public Web Browser - $125[3] • NinjaForms - $50	01-02-5520	$3,445.00

Contractual/Automation Services • Sonicwall maintenance - $0[4] • VMWare maintenance - $0[2] • Meraki WiFi management - $0[5] • MyPC/PaperCut - $749 • Wireless printing/vending maintenance - $1,045 • Library Calendar - $1,500 • Beanstack (reading program) - $900 • MyPromo receipt software - $240 • Barracuda/Office 365 - $0[2] • Barracuda backup updates & cloud storage - $0[6] • Web hosting - $720 (multi-year)	01-01-5103	$5,154.00
Contractual/Automation-Monthly (SWAN) • Automation monthly charge - $36,000	01-01-5101	$36,000.00
Contractual/Broadband Services • AT&T fiber circuit - $3,168 • IL Century Network Internet - $350 • Cable Internet - $3,000 • Mobile broadband - $1,372 (6 @ $120, 2 @ $325.80)	01-01-5105	$7,890.00
Contractual/Technology Services • Technology consulting/contracting - $2,500	01-01-5125	$2,500.00
Contractual/OCLC	01-01-5104	$0.00
Contractual/Rental/Lease • KMBS Bizhub C258 @ $138.35/month * 7 months • Postage meter @ $53.02/month * 12 months	01-01-5102	$1,605.00
Buildings & Contingency/Maintenance of Equipment • TBS Scan Station maintenance - $855 • Cisco maintenance - $0 • Copier maintenance/consumables - $5,000 • ScanPro maintenance - $760 • Self-check maintenance - $3,130 • Telephone system maintenance - $1,100 • LuxerOne kiosk maintenance - $0[2]	01-01-5236	$10,845.00
Utilities/Telephone	01-01-5202	$9,000.00
Total Technology Costs--FY 2022		**$110,239.00**

[1] Cost reflects a 3-year service term purchased in 2021
[2] Cost reflects a 3-year service term purchased in 2020
[3] The Library is currently able to license Public Web Browser at no cost through the RAILS system. Since the current agreement through RAILS is renewed annually later in the year, the cost to renew for VPPL is reflected here as a contingency
[4] Service to be included with new device scheduled to be purchased in 2022
[5] Cost reflects a 7-year service term purchased in 2019
[6] Cost reflects a 5-year service term purchased in 2020

Fiscal Year 2023

The Library plans to act on the following items in FY2023. Specific costs are itemized in the table below, and may include a 5% projected cost escalation from previous years.

- Purchase approximately 16 desktop computers, laptops, and monitors as part of the technology replacement cycle.
- Replace one virtualization server as part of the technology replacement cycle
- Renew software license agreements with Adobe (Creative Cloud), Sage (accounting software), Faronics (Deep Freeze), and Public Web Browser.
- Renew service agreements with Library Calendar, VMWare (virtualization), Cen-Tec (promo receipts), TBS (wireless printing service), and Barracuda (email security/archiving)
- Renew maintenance agreements for self-checkout, computer reservation, print release and vending units (3), BookScan Station, digital microfilm reader, phone system, and LuxerOne (locker system)
- Existing contract agreements continue with Sophos (endpoint protection), Faronics (Deep Freeze), VMWare (server virtualization), Meraki (WiFi cloud management), Barracuda (email security & network backup)
- Staff decided not to renew Beanstack summer reading program and will evaluate alternative solutions

Technology costs are itemized below. The budget column reflects a projected annual budget, and may be higher than the sum of enumerated items for some accounts:

Non-Capital Outlay/Cabling or Wireless solutions	01-02-5540	$500.00
Non-Capital Outlay/PCs and Monitors (includes tablet devices)	01-02-5500	$19,000.00
Non-Capital Outlay/Hardware replacements • Switch replacement - $0 • Color copier (replace C258) - $8,000	01-02-5530	$8,000.00
Non-Capital Outlay/Server Upgrades • Virtualization server- $6,000	01-02-5550	$6,000.00
Non-Capital Outlay/Software Upgrades • Sophos AV - $0[1] • Adobe CC - $1,920 (2 seats) • Faronics / Deep Freeze - $850 (multi-year) • Sage Accounting - $1,400 • Public Web Browser - $125[2] • NinjaForms - $50	01-02-5520	$4,345.00
Contractual/Automation Services • Sonicwall maintenance - $0[3] • VMWare maintenance - $200[4] (multi-year) • Meraki WiFi management - $0[5] • MyPC/PaperCut - $749 • Wireless printing/vending maintenance - $1,445 • Library Calendar - $1,500 • MyPromo receipt software - $240 • Barracuda/Office 365 - $3,500[4] (multi-year) • Barracuda backup updates & cloud storage - $0[6] • Web hosting - $0[7]	01-01-5103	$7,634.00
Contractual/Automation-Monthly (SWAN) • Automation monthly charge - $36,000	01-01-5101	$36,000.00

Contractual/Broadband Services • AT&T fiber circuit - $3,168 • IL Century Network Internet - $350 • Cable Internet - $3,100 • Mobile broadband - $1,372 (6 @ $120, 2 @ $325.80)	01-01-5105	$7,990.00
Contractual/Technology Services • Technology consulting/contracting - $5,000	01-01-5125	$5,000.00
Contractual/OCLC	01-01-5104	$0.00
Contractual/Rental/Lease • Postage meter @ $53.02/month * 12 months	01-01-5102	$637.00
Buildings & Contingency/Maintenance of Equipment • TBS Scan Station maintenance - $855 • Cisco maintenance - $0 • Copier maintenance/consumables - $5,000 • ScanPro maintenance - $785 • Self-check maintenance - $3,290 • Telephone system maintenance - $1,100 • LuxerOne kiosk maintenance - $2,000	01-01-5236	$13,030.00
Utilities/Telephone	01-01-5202	$9,000.00
Total Technology Costs--FY 2023		**$117,136.00**

[1] Cost reflects a 3-year service term purchased in 2021

[2] The Library is currently able to license Public Web Browser at no cost through the RAILS system. Since the current agreement through RAILS is renewed annually later in the year, the cost to renew for VPPL is reflected here as a contingency

[3] Service to be included with new device scheduled to be purchased in 2022

[4] Cost reflects a new 3-year service term

[5] Cost reflects a 7-year service term purchased in 2019

[6] Cost reflects a 5-year service term purchased in 2020

[7] Cost reflects a 2-year service term proposed in 2022

Fiscal Year 2024

The Library plans to act on the following items in FY2023. Specific costs are itemized in the table below, and may include a 5% projected cost escalation from previous years.

- Purchase approximately 16 desktop computers, laptops, and monitors as part of the technology replacement cycle.
- Replace one network switch as part of the technology replacement cycle
- Replace two color multifunction copiers at end of life
- Renew software license agreements with Adobe (Creative Cloud), Sage (accounting software), Sophos (endpoint protection), and Public Web Browser.
- Renew service agreements with Library Calendar, Cen-Tec (promo receipts), TBS (wireless printing service), GoDaddy (web hosting)
- Renew maintenance agreements for self-checkout, computer reservation, print release and vending units, BookScan Station, digital microfilm reader, phone system, and LuxerOne (locker system)
- Existing contract agreements continue with Sophos (endpoint protection), Faronics (Deep Freeze), VMWare (server virtualization), Meraki (WiFi cloud management), Barracuda (email security & network backup)

Technology costs are itemized below. The budget column reflects a projected annual budget, and may be higher than the sum of enumerated items for some accounts:

Non-Capital Outlay/Cabling or Wireless solutions	01-02-5540	$500.00
Non-Capital Outlay/PCs and Monitors (includes tablet devices)	01-02-5500	$19,000.00
Non-Capital Outlay/Hardware replacements • Switch replacement (2960X-24TS-L) - $3,000 • Color copier (replace C3351) - $3,500	01-02-5530	$6,500.00
Non-Capital Outlay/Server Upgrades	01-02-5550	$0.00
Non-Capital Outlay/Software Upgrades • Sophos AV - $5,000[1] • Adobe CC - $1,920 (2 seats) • Faronics / Deep Freeze - $0[2] • Sage Accounting - $1,400 • Public Web Browser - $125[3] • NinjaForms - $50	01-02-5520	$8,495.00
Contractual/Automation Services • Sonicwall maintenance - $0[4] • VMWare maintenance - $0[2] • Meraki WiFi management - $0[5] • MyPC/PaperCut - $749 • Wireless printing/vending maintenance - $1,445 • Library Calendar - $1,500 • MyPromo receipt software - $240 • Barracuda/Office 365 - $0 • Barracuda backup updates & cloud storage - $0[6] • Web hosting - $720[7] (multi-year)	01-01-5103	$4,654.00
Contractual/Automation-Monthly (SWAN) • Automation monthly charge - $36,000	01-01-5101	$36,000.00

Contractual/Broadband Services
  • AT&T fiber circuit - $3,168
  • IL Century Network Internet - $350
  • Cable Internet - $3,200
  • Mobile broadband - $1,372 (6 @ $120, 2 @ $325.80)
	01-01-5105	$8,090.00

Contractual/Technology Services • Technology consulting/contracting - $5,000	01-01-5125	$5,000.00
Contractual/OCLC	01-01-5104	$0.00
Contractual/Rental/Lease • Postage meter @ $53.02/month * 12 months	01-01-5102	$637.00

Buildings & Contingency/Maintenance of Equipment
  • TBS Scan Station maintenance - $855
  • Cisco maintenance - $0
  • Copier maintenance/consumables - $5,000
  • ScanPro maintenance - $810
  • Self-check maintenance - $3,450
  • Telephone system maintenance - $1,100
  • LuxerOne kiosk maintenance - $2,000
	01-01-5236	$13,215.00

Utilities/Telephone	01-01-5202	$9,000.00
Total Technology Costs--FY 2024		**$111,091.00**

[1] Cost reflects a new 3-year service term
[2] Cost reflects a 3-year service term proposed in 2023
[3] The Library is currently able to license Public Web Browser at no cost through the RAILS system. Since the current agreement through RAILS is renewed annually later in the year, the cost to renew for VPPL is reflected here as a contingency
[4] Service to be included with new device scheduled to be purchased in 2022
[5] Cost reflects a 7-year service term purchased in 2019
[6] Cost reflects a 5-year service term purchased in 2020
[7] Cost reflects a new 2-year service term

Areas for Future Expansion

The Library would like to implement several other technological innovations. However, due to budgetary restraints, the Library has determined not to plan for these items during any particular fiscal year. Instead the Library will refer to this portion of its Technology Plan as its "Technology Wish List" and will look to apply for grants and other sources of funding to assist in the implementation of these services. Other contingencies, which the Library cannot plan for during any particular year, will also be added to this "wish list".

RFID

Library staff will evaluate purchasing an RFID checkout system, potentially using available funds from the 2018-19 construction project. Implementing RFID would require purchasing RFID-equipped checkout gate, upgrading the self-checkout stations, tagging the entire materials collection, as well as coordination with SWAN to implement RFID through the Sirsi ILS. Potential costs include hardware, RFID tags, electrical upgrades in the lobby, and staff time to tag the collection.

Internet Connectivity

The Library must continue to monitor Internet bandwidth to meet ever-growing patron demand. In 2010, the Library added a cable modem from Comcast to provide additional bandwidth for patron Internet usage; this service was upgraded in 2016 and again in 2019 and is currently used for all general internet traffic other than Sirsi. The Library planned to upgrade its ICN internet connection in 2015 from 3 Mb/s to 10 Mb/s after upgrading the AT&T T1 lines to Switched Ethernet Service, but reductions in the state budget negated that possibility due to increased cost. Staff will continue to monitor developments in the internet market and work with consultants on long-term network planning.

Internet utilization should be monitored on an ongoing basis as emerging video, voice, and gaming services use increasing amounts of bandwidth.

Automation Staffing

The Library expects to continue expanding the availability and use of computer technology and multimedia in the future. The Library will likely have a need in the future for additional automation staff hours to cope with expanding technology and patron and staff expectations of timely service and support. As a result, the Library may need to explore restructuring its organization to establish Automation as a separate department.

Other Areas of Potential Growth

The Library will:

- Consider the purchase and implementation of a prepaid debit card system for use with existing copiers and printers.
- Monitor emerging technologies such as netbooks, electronic books, and cloud computing
- Explore the possibility of hiring additional automation staff to assist in ongoing projects.
- Promote usage of videogame stations in the Teen area following the COVID-19 pandemic.
- Monitor the utilization of the public wireless network and plan to expand capacity in the future if the need is indicated
- Explore adding additional backup electrical capacity for network and technology operations
- Explore subscription software options from Microsoft and other vendors an alternative to perpetual licensing
- Staff will work with the library's insurance carrier to identify areas necessary to comply with cybersecurity liability policies