

# Technology Plan Kewanee Library January 2023 through December 31, 2025

## 1. Introduction

The Kewanee Library Director, Employees, and Board recognize the importance and the impact technology plays in the local community. The goal of the audit performed and subsequent technology plan is to improve the access, reliability, and provide a high standard of service to the local community. This document presents the current state, any planned implementations, future priorities, and plans technology necessary to deliver these services.

## 2. Mission Statement

We meet the needs of our community by connecting people with equitable access to resources, services, programs, and technology.

## 3. Vision

Empowering growth and connection is the vision statement of the library. Within the audit performed the following recommendations are based on this vision. While the existing technology has served the library well for years, the upgrades recommended will put the library on a solid path forward. Thus allowing staff and patrons to grow and make connections beyond their wildest dreams.

## 4. Strategic Planning Goals:

Experience: We welcome everyone by developing positive relationships and providing knowledgeable service.

- Cultivate inclusion and belonging through collections, programs, services, and partnerships
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Engage: We create connections to support a vibrant, well-informed community.

- Raise awareness of how the library is a vital part of the community
- Design programs that are responsive and appealing to enrich the lives of community members

Enhance: We strive for continuous improvement and positive impact in our community.

- Learn, adapt, and prepare for the future

- Reimagine library spaces and services that work for everyone

## 5. Technology Assessment:

Equipment	In Service	Spares
Desktops	25	1
Servers	2	
Switches	3	1
Firewalls	2	
Wireless AP's	6	6
Laser Printers	8	
Copiers MFP	5	
Laptops	8	
Receipt Printers	6	

## End User Workstations:

The Dell PC's in use by staff at desks and lab stations will be 5 years old at the end of October 2022. The HP systems in use warranty start date was July 28, 2014. None of these systems meet minimum specifications for upgrades for Windows 11. Support for Windows 10 ends October 14, 2025.

## Network Infrastructure:

Network cabling is a concern. While the library does have a cabling infrastructure which is professionally installed, it lacks the proper number of cables in each area to properly support the current number of PC's, Printers, and other devices installed.

The wired network infrastructure is made up of many different types and models of network gear. While the network is functional, it is inefficient and difficult to support due to the small 4 port switches scattered across the building. The network equipment in the main server room is made up of different models over many different years which makes it difficult to support and inefficient.

The wireless infrastructure is made up of Cisco access points which are all out of support with some access points being more than 5 years old. Modern tablets and phones are backwards compatible with wireless access points allowing service. However, the older access points cannot take advantage of new protocols which will lessen congestion and increase speeds.

This combined with inefficient placement is causing the wireless issues employees and patrons face on a regular basis. During the audit 6 Meraki Go wireless access points were installed. While access and signal has improved the placement is still not ideal.

## **Servers and Backups:**

The library has two primary servers: Active Director Domain controller which has roles as a print server and file server and a Microsoft Exchange E-mail Server. Backups are performed by utilizing rotating hard drives on-site.

Other services such as the PC logon and reservation system utilize PC's with the applications installed on them for staff to access remotely from their desk.

## **6. Budget**

Budget for the refresh will be funded from funds being repurposed at the end of this calendar year.

## **7. Technology Goals and Objectives**

### **A. Stabilize the Network's Foundation**

#### **1. Objective 1: Upgrade Network Foundation to Support Modern Technology (Target 2023Q1)**

- A. Add network cabling for each device back to the main server. Remove all hubs and small switches outside of the main server room. Add cabling for wireless access points in additional positions in the ceiling where possible. Recommend testing access point placement prior to cabling for future access points in ceiling.
- B. Migrate the onsite Exchange server to the Office 365 cloud. Microsoft discounts memberships for Libraries which should keep operational costs low. Initial cost would be to engage a service provider with experience to assist with transition. Possible service providers would be Rouse Consulting Group, Clifton Larsen Allen, Marco Technologies.
- C. Install Veeam Office 365 Backup or similar software to an on-site server to backup e-mail housed in the Office365 Cloud.

#### **2. Objective 2: Building Upon Network Foundation (Target 2023Q2)**

- A. Evaluate upgrading from the existing CIPA filter to an Enterprise grade firewall like a Sonicwall, Meraki, or Cisco firewall. This would create better stability, throughput, and security.
- B. Evaluate utilizing a cloud filtering service such as Cisco OpenDNS to accomplish web filtering.

- C. Evaluate utilizing Teams for an internal intranet and chat communications among library staff.

### **3. Objective 3: Provide Consistent Service (Target 2023Q3)**

- A. Upgrade network switches to all Power over Ethernet Switches. Providing power to phones, wifi, and other small devices. Creating a consistent environment to administer and support. Recommend Meraki, Cisco, or HP switches.
- B. Begin planning on how to implement wireless access points with the new firewall and switches installed to segment

### **4. Objective 4: Provide Consistent Service (Target 2023Q4)**

- A. Upgrade the existing UPS which was in 2013 to an online interactive UPS which will provide better service and longer runtime.
- B. Upgrade WiFi Access points in the entire Library leveraging the new cabling to support patrons on all floors with consistent service. Recommend Meraki or Aruba wireless access points. (Note: Due to chip shortages it is recommended to order access points in 2023 Q1 or Q2 for delivery in Q3 or Q4.)
  - A. Recommend different wireless networks for patrons and library employees.
  - B. Recommend using a splash screen (captive portal) when patrons logon the wireless network with terms and conditions of use for the library.

## **B. Position Infrastructure Towards the Future**

### **1. Objective 1: Setup Infrastructure Internally for the Cloud (Target 2024Q1)**

- A. Evaluate purchasing and installing a new server utilizing Hyper-V Virtualization. Recommend migrating files to this virtualized server. Retain the existing server as a secondary Domain Controller. These moves minimizes cost while positioning the Library the ability to ease into the cloud and test applications properly before moving. Pivoting to the cloud as time and funding permits in the future.
- B. Install Cloud backup service such as Carbonite or Veeam to protect on-site servers and data. Please note these services will be needed when a move to the Microsoft Cloud is made.
- C. Evaluate utilizing other Office 365 technologies like Microsoft Bookings for online appointments, Microsoft Forms for surveys, and OneDrive for online file sharing.

### **2. Objective 2: Enhance Security (Target 2024Q2)**

- A. Evaluate next generation Antivirus solutions EDR/XDR from a service provider to provide better security and recovery in case of a malware or ransomware issue. While it would be great to cover all PC's with this technology if budget is a concern just the servers or servers and employee PC's could be covered.
- B. Logically segment Lab PC's from other network assets utilizing VLAN's for additional security. Test and only allow access to local services which are necessary for operation.
- C. Develop an updated Technology Disaster Recovery & Incident Response Plan to formalize response to any Malware and Ransomware incidents.

**3. Objective 3: Begin Upgrading Desk and Patron PC's (Target 2024Q3)**

- A. Upgrade existing receipt printers to thermal USB printers at each circulation desk.
- B. Upgrade Circulation Desk PC's.

**4. Objective 4: Upgrade Lab PC's (Target 2024Q4)**

- A. Upgrade lab PC's ahead of the Windows 10 end of life in 2025.

**C. Leverage Investments to the Future**

**1. Objective 1: Begin Cloud Investigation (Target 2025Q1)**

- A. Evaluate if File Sharing and storage can be accomplished utilizing Microsoft OneDrive or other similar web storage services. Doing this could provide a more cost efficient storage system and utilize the existing investment in Office 365 Backup system for Disaster Recovery.

**2. Objective 2: Evaluate Cloud Infrastructure (Target 2025Q2)**

- A. Evaluate moving the existing virtual machine servers into the cloud versus utilizing cloud services such as Azure Active Directory. Moving to Azure Active Directory could have many benefits which includes less downtime and lessening upgrade costs.

**3. Objective 3: Evaluate Merging Office 365 Web Services with Main Website (Target 2025Q3)**

- A. Investigate and evaluate merging some Office 365 services such as public areas of OneDrive, Sharepoint, Microsoft Bookings and more with the main website. Combining the two assets could eliminate duplicate storage and maintenance of files while making it easier for Library staff to change website content.

**4. Objective 4: Begin Creating New Strategic Plan (Target 2025Q4)**

- A. Review and evaluate the existing plan and outcomes.
- B. Gather requirements from stakeholders and existing technology standards.
- C. Create new plan which encompasses past investments, performance, with plans towards the future.

## **8. Training**

With the implementation of new technologies such as Office365 many things will be familiar to employees. However, Office365 comes with new features which the library can leverage for additional access and productivity. It is important staff receive regular training on these features either in workshops or online training. It is recommended the library appoint someone to not champion the training among the staff. As the library continues its journey towards the cloud training will be critical to utilizing new assets by employees.

## **9. Technology Maintenance**

Ongoing and routine maintenance of the technology should be documented and managed by someone on staff for best results. It is recommended the person in this role should have a base

familiarity with existing technologies as well as the ability to pivot towards new web services such as Office 365. The ability to work with, coordinate, and understand base Information Technology terminology, structure, and workings.

## **Disaster Recovery**

The library does have the means for disaster recovery. The library should update the plan as technology is upgraded. The disaster recovery plan is recommended have a table top test and be reviewed on a yearly basis