TRUSTEES OF THE PUBLIC LIBRARY OF THE CITY OF BOSTON

Meeting of the Trustees Finance and Audit Committee
Tuesday, March 16, 2021 at 8:00 a.m.
Held via Zoom: https://boston-public-library.zoom.us/j/89248272657

REVISED AGENDA

I. **Committee Chair Report**
Evelyn Arana-Ortiz, Committee Chair

   A. Welcome remarks
   B. Roll Call of Committee Members
   C. Review and Approval of Meeting Minutes from January 5, 2021

II. **Review of financial market conditions and impact on the Library's endowment**
Sebastian Grzejka, NEPC Principal and Senior Consultant

III. **Review and award contracts associated with the E-rate program**
Ellen Donaghey, Chief Financial Officer

   A. Contract for Multi-Site Connectivity Services for the Boston Public Library System / E-Rate Funding Eligible

       VOTED: **"that, the Trustees Finance and Audit Committee of the Public Library of the City of Boston approve to be entered into with: City of Boston, Dept of Innovation and Technology, located at: One City Hall Square, Boston MA 02201, the most responsive and responsible bidder in a public Request for Proposal (RFP) process, advertised under M.G.L. 30B, a contract for: MBLN Multi-Site Connectivity (BPL) as specified for one year with the BPL option to renew for two additional years at the proposal price, at a total not to exceed: Three hundred seven thousand, eight hundred dollars ($307,800.00) per fiscal year, contingent upon receipt of Universal Services Administrative Co Federal funding (E-rate). The Boston Public Library Evaluation Committee performed an evaluation of the proposals submitted by the vendors as described in the RFP documents, and through this process determined the proposal presented by: City of Boston - DoIT represented the best value for the Boston Public Library."**

   B. Contract for eRate eligible services for MBLN Network Hardware Upgrade

       VOTED: **"that, the Trustees Finance and Audit Committee of the Public Library of the City of Boston approve to be entered into with: ePlus, located at: 13595 Dulles Technology Drive, Herndon, VA 20171 the lowest eligible, responsible, and responsive bidder in the public bidding, advertised under M.G.L. 30B, a contract for: MBLN Network Hardware Upgrade as specified for one year, at a total cost not to exceed: Eight hundred seventy one thousand, nine hundred seventeen dollars ($871,917.00), contingent upon receipt of Universal Services Administrative Co Federal funding (E-rate). The Boston Public Library Evaluation Committee performed an evaluation of the bid packages submitted by the vendors as described in the IFB documents, and through this process determined the bid presented by: ePlus represented the best value for the Boston Public Library."**

IV. **Award of Contract for Guard and Patrol Services**
Ellen Donaghey, Chief Financial Officer

VOTED: "that, the Trustees Finance and Audit Committee of the Public Library of the City of Boston approve a contract for one year with two one year options to renew for Guard and Patrol Services for Boston Public Library System to Securitas Security Systems USA at One Harbor Street, Suite 301, Boston, MA 02210."

V. **Review and approval for recommendation of the BPL Technology Plan 2021**
Kurt Mansperger, Chief Technology Officer

      VOTED: "that, the Finance and Audit Committee of the Public Library of the City of Boston vote to recommend to the Board of Trustees to accept the Boston Public Library Technology Plan as presented."

VI. **New Business**

VII. **Public Comment**
Evelyn Arana-Ortiz, Committee Chair

*Public is welcome to sign up via the Chat feature on the Zoom call and allowed 2 minutes to speak. These spoken comments will be recorded into the meeting minutes."

VIII. **Adjournment**
Evelyn Arana-Ortiz, Committee Chair

Next meeting is Tuesday, May 11, 2021 at 8:00 a.m. via Zoom
*Meeting is subject to change

Trustees Finance and Audit Committee of the Public Library of the City of Boston
Evelyn Arana-Ortiz, Committee Chair
Members: Zamawa Arenas, John Hailer, Jeff Hawkins, and David Leonard

Clerk of the Board, Pamela Carver

This is an open meeting; the public is welcome to attend; for information: www.bpl.org

Zoom Link: https://boston-public-library.zoom.us/j/89248272657   Webinar ID: 892 4827 2657

Call in option: 1 301 715 8592, or 1 312 626 6799, or 1 646 558 8656, or 1 253 215 8782, or 1 346 248 7799
International numbers available: https://boston-public-library.zoom.us/u/kebkusAjTO

Pamela Carver, Clerk of the Board ,revised 3.12.21

QUARTERLY INVESTMENT PERFORMANCE REPORT
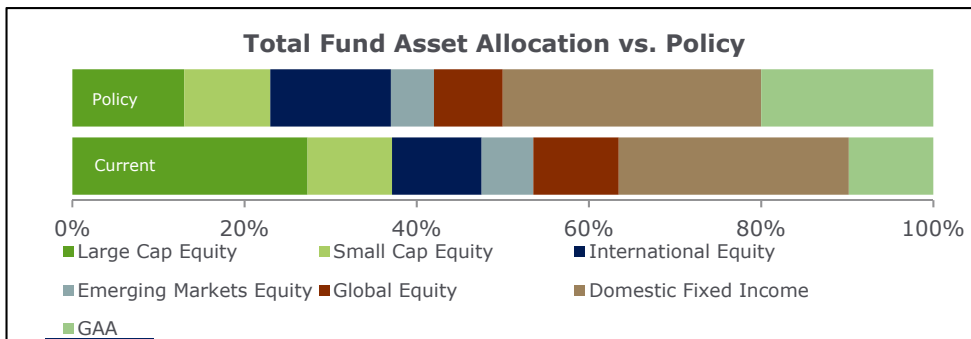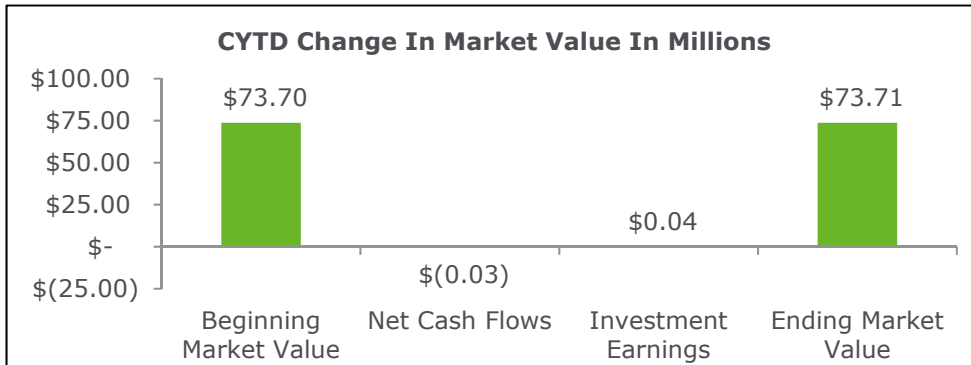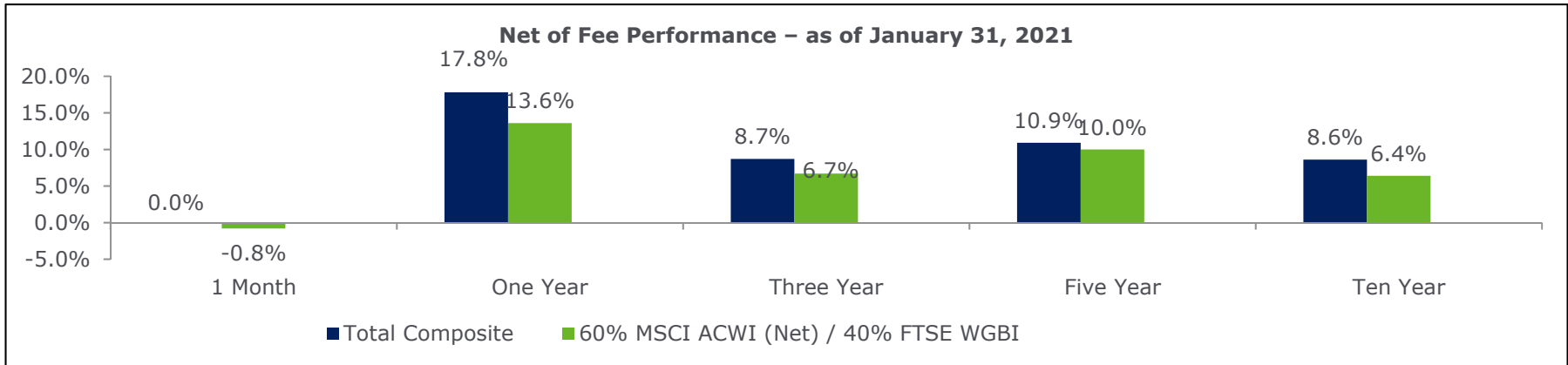## BOSTON PUBLIC LIBRARY

March 2021

Sebastian Grzejka, CAIA, Principal
Zoe Heyman, Senior Analyst

BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

TOTAL FUND EXECUTIVE SUMMARY

Net of Fee Performance – as of January 31, 2021

Legend: ■ Total Composite ■ 60% MSCI ACWI (Net) / 40% FTSE WGBI

Period	Total Composite	60% MSCI ACWI (Net) / 40% FTSE WGBI
1 Month	0.0%	-0.8%
One Year	17.8%	13.6%
Three Year	8.7%	6.7%
Five Year	10.9%	10.0%
Ten Year	8.6%	6.4%

CYTD Change In Market Value In Millions

Beginning Market Value	Net Cash Flows	Investment Earnings	Ending Market Value
$73.70	$(0.03)	$0.04	$73.71

Total Fund Asset Allocation vs. Policy

Legend: ■ Large Cap Equity ■ Small Cap Equity ■ International Equity ■ Emerging Markets Equity ■ Global Equity ■ Domestic Fixed Income ■ GAA

- **Meeting 3/16/2021**
  - Review of Recommended Asset Allocation proposed targets

- **Top Contributors to Performance**
  - Global Equity manager Impax Global Resource Optimization Fund, was the strongest contributor with a return of 2.3%, outperforming the ACWI by 280 bps
  - UBS EME Halo returned 3.3% outperforming the MSCI Emerging Market Index by 20 bps
  - PIMCO All Asset returned 1.7%, outperforming the PIMCO All Asset Index by 210 bps

- **Top Detractors from Performance**
  - Domestic Large Cap equities were the largest detractors of performance. SSgA SRI S&P 500 returned -1.3%, trailing the S&P 500 by 30 bps
  - Diamond Hill Large Cap was the largest detractor, with a 1-month return of -2.1%, underperforming the benchmark by −110 bps

City of Boston Pool 4: Boston Public Library
TOTAL FUND PERFORMANCE DETAIL (NET)

	Market Value ($)	% of Portfolio	Policy %	1 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Composite	73,699,370	100.0	100.0	0.0	17.8	8.7	10.9	8.6	9.5	Jan-81
60% MSCI ACWI (Net) / 40% FTSE WGBI				-0.8	13.6	6.7	10.0	6.4	--	Jan-81
Total Domestic Equity	27,360,842	37.1	23.0							
SSgA SRI S&P 500	12,091,630	16.4		-1.3	16.8	12.0	16.5	13.7	14.9	Jan-09
S&P 500				-1.0	17.2	11.7	16.2	13.5	14.8	Jan-09
Diamond Hill Large Cap Class Y Shares	8,068,527	10.9		-2.1	9.7	7.1	--	--	10.1	May-17
Russell 1000 Value				-0.9	4.1	4.4	10.7	10.2	7.3	May-17
Segall Bryant & Hamill Small Cap	7,200,685	9.8		-0.7	24.9	12.6	16.0	--	10.6	Jan-15
Russell 2000				5.0	30.2	11.1	16.5	11.8	10.8	Jan-15
Total Non-US Equity	12,103,144	16.4	19.0							
Total International Equity	7,647,330	10.4	14.0							
Earnest International Investment Trust Fund	7,647,330	10.4		0.0	18.4	3.2	11.6	--	5.4	May-14
MSCI ACWI ex USA				0.2	14.0	3.1	10.5	4.8	4.8	May-14
Total Emerging Markets Equity	4,455,814	6.0	5.0							
UBS EME HALO	4,455,814	6.0		3.3	34.0	--	--	--	28.7	Jun-19
MSCI Emerging Markets				3.1	27.9	4.4	15.0	4.2	21.7	Jun-19
Total Global Equity	7,312,159	9.9	8.0							
Impax Global Resource Optimization Fund	7,312,159	9.9		2.3	--	--	--	--	77.2	Apr-20
MSCI ACWI				-0.5	17.0	7.9	13.6	8.9	47.2	Apr-20
Total Domestic Fixed Income	19,687,425	26.7	30.0							
IR&M Core Bond Fund II	6,370,355	8.6		-0.3	3.6	4.2	3.4	3.7	4.5	Mar-07
BBgBarc US Aggregate TR				-0.7	4.7	5.5	4.0	3.8	4.4	Mar-07
SSgA Treasury Inflation Protected Securities	6,140,494	8.3		0.3	9.0	6.3	--	--	5.8	Jan-18
BBgBarc US TIPS TR				0.3	9.1	6.3	4.8	3.8	5.9	Jan-18
Manulife Asset Management	7,176,576	9.7		-0.5	6.1	--	--	--	5.3	Mar-18
BBgBarc Global Aggregate TR				-0.9	6.9	4.1	4.4	2.7	4.6	Mar-18
Total Balanced - GAA	7,235,800	9.8	20.0							
PIMCO All Asset	7,235,800	9.8		1.7	11.6	4.6	8.9	--	5.1	Jul-12
PIMCO All Asset Index				-0.4	7.2	6.2	6.0	5.0	4.5	Jul-12

-PIMCO All Asset Index consists of 40% BC Aggregate / 30% Barclays US TIPS Index/ 10% S&P 500 / 10% HY / 10% JPM EMBI + TR.
-IR&M Core Bond Fund II' and PIMCO All Asset' valuations include small amounts of cash.
-Returns are net of fees.
-New Policy % targets as of 4/1/2020.

January 31, 2021

ASSESSING THE KEY MARKET THEMES
AS OF 12/31/20

Virus Trajectory
No Change in Status

Dormant	Faded	Neutral	Prevalent	**Dominant**

- Virus Trajectory continues to be the dominant force driving global economic outcomes
- Market sentiment improved with successful vaccine candidates, though concerns remain around distribution, logistics, and supply of the vaccine
- Uncertainty remains as worsening COVID-19 trends and a potential new strain of the virus may impact the timing of an economic recovery

Permanent Interventions
No Change in Status

Dormant	Faded	Neutral	Prevalent	**Dominant**

- Permanent Interventions continues to be the dominant force driving global markets upward
- In the US, a fifth coronavirus relief package worth about $900 billion was passed. In Europe, the Central Bank expanded its emergency bond-buying program by €500B and extended the program

Globalization Backlash*
No Change in Status

Dormant	Faded	Neutral	**Prevalent**	Dominant

- The importance of the theme may increase in coming years as the lasting impact from the pandemic is seen
- The world will likely be faced with an amplified wealth divide given economic and labor market disruptions, which historically has driven more volatile political outcomes

China Transitions*
No Change in Status

Dormant	Faded	**Neutral**	Prevalent	Dominant

- US-China tensions escalated as President Trump signed two executive orders that prohibited US investors from owning a select number of corporate securities from China and banned transactions with some Chinese software applications
- President-elect Biden has promised a policy review in 2021 regarding the US policy posture with China

* Details included in appendix

NEPC'S STRATEGIC OUTLOOK BY BETA GROUP

Equity

- **Equity return assumptions have declined year-over-year as stock prices have rebounded sharply following the sell-off in March**
  - Discounting future earnings with lower interest rates supports higher equity valuation multiples over time

Credit

- **Credit return assumptions have declined year-over-year as credit spreads have tightened**
  - Safe-haven fixed income return assumptions are materially lower due to lower interest rates and muted inflation expectations

Real Assets

- **Real asset assumptions reflect a high level of uncertainty due to the dislocation in energy prices and a decline in demand for core real estate**
  - The strategic outlook for real assets reflects a high level of uncertainty due to subdued inflation expectations

Date Published	12/31/2020	12/31/2019	---
Asset Class	**10-Year Return**	**10-Year Return**	**Change YoY**
Cash	0.8%	1.8%	-1.0%
US Inflation	2.0%	2.3%	-0.3%
Equity			
US Large-Cap Equity	5.4%	6.0%	-0.6%
Int'l Developed Equity	5.9%	6.8%	-0.9%
Int'l Emerging Equity	7.5%	9.3%	-1.8%
*Global Equity**	*6.2%*	*7.0%*	*-0.8%*
*Private Equity**	*9.3%*	*10.0%*	*-0.7%*
Debt			
US Treasury Bond	0.9%	2.5%	-1.6%
*US Aggregate Bond**	*1.4%*	*3.0%*	*-1.6%*
US TIPS	1.0%	3.0%	-2.0%
US High Yield Corporate Bond	2.9%	5.3%	-2.4%
*Private Debt**	*6.1%*	*7.6%*	*-1.5%*
Real Assets			
Commodity Futures	0.9%	4.3%	-3.4%
US REIT	5.5%	6.8%	-1.3%
Gold	2.9%	NA	NA
Core Real Estate	4.4%	6.0%	-1.6%
Multi Asset			
*US 60/40**	*4.1%*	*5.1%*	*-1.0%*
*Global 60/40**	*4.6%*	*5.1%*	*-0.5%*
*Hedge Fund**	*4.0%*	*5.7%*	*-1.7%*

Calculated as a blend of other asset classes

ASSET ALLOCATION - INTRODUCTION

- **NEPC prepares an asset allocation update for the Boston Public Library on an annual basis**
  - The goal is to provide updated Risk and Return Assumptions based on NEPC's newest asset allocation outlook
    - Expected returns, volatility and correlations are produced based on a combination of forward looking analysis and historical data
    - Assumptions are developed for over 70 asset classes
  - Secondarily, the analysis allows for the reaffirmation or approach of the Fund relative to stated goals and objectives
    - BPL revised its target asset allocation in 2019 with the addition of global equity

- **We have prepared an annual review of the Library's asset allocation**
  - Given the current environment, we recommend slight adjustments to targets, incorporating current opportunities and aligning the target with current exposures
    - NEPC's permanent interventions theme, which views continued central bank support for markets and low rates, boosts sentiment and potential outlook for risk assets
      - We want to focus on bringing the BPL exposure in line with the MSCI ACWI, and have provided a rebalancing recommendation to achieve this
      - We are not recommending a change to the current line up of managers within equity
    - Within fixed income, balance safe haven and credit seeking exposure
      - We recommend adding a dedicated treasury exposure to bolster safe have assets, which along with the allocation to TIPS, complements the credit oriented strategies in the Fund
      - The allocation to treasuries can be completed via a passive (index) implementation with SSgA
    - Finally, we recommend reducing the target allocation to GAA
      - This allocation was never fully implemented to target, therefore, we are reallocating the target within the strategic allocation to equities and fixed income
      - We recommend maintaining the allocation with PIMCO, albeit at a slightly lower weight

BPL ASSET ALLOCATION REVIEW

Asset Group	1/31/2021 Allocation	BPL Target	BPL Mix A
Large Cap Equity	27.3	18	22
Small/Mid Cap Equity	9.8	5	7
International Equity	10.4	14	12
Global Equity	9.9	8	12
Emerging Market Equity	6.0	5	7
Total Equity	**63.4**	**50**	**60**
TIPS	8.3	10	7
Treasuries	0	0	7
Core Bonds	8.6	10	10
Multi-Sector Credit	9.7	10	8
Total Fixed Income	**26.6**	**30**	**32**
Global Asset Allocation	9.8	20	8
Total Multi Asset	**9.7**	**20**	**8**
Cash	**0**	**0**	**0**

Expected Return (10 Year)	5.0%	4.7%	4.9%
Standard Deviation (10 Year)	12.8%	11.5%	12.1%
Sharpe Ratio (10 Year)	0.33	0.34	0.34

*Returns are beta only and do not include the potential value add from active management

The current BPL target looked to balance exposures, by taking a conservative total return approach.

Given todays environment, we recommend minor changes to the allocation which better align it with current opportunities, as well bring it more in line with the current allocation.

Mix A looks to adjust the long term target to better represent current opportunities, balance exposures and maintain an attractive risk and return profile.

Relative to the current target allocation, we reduce GAA in favor of strategic equities and fixed income, balance the regional exposure in equities to better align to the MSCI ACWI and increase safe haven assets in fixed income.

This results in a portfolio that maintains similar risk/return characteristics the current target.

The proposed Mix A also looks to bring the target closer in line with the current allocation. As a result, only minor rebalancing is needed to achieve the majority of the recommended changes.

NEPC recommends retianing SSgA for the Treasury allocation. We have provided a one page summary for this exposure.

HYPOTHETICAL FULL IMPLEMENTATION – MIX A

Asset Allocation Rebalance Summary
January 31, 2021

	Market Value	Current Weight in Fund	Target Weight	Over/ Under%	Recommendation	New Market Value	New Weight
Composite	$ 73,699,370	100.0%	100.0%	-3.0%	$ -	$ 73,699,370	100.0%
Total US Equity	$ 27,360,842	37.1%	29.0%	8.1%	$ (5,900,000)	$ 21,460,842	29.1%
SSgA SRI S&P 500	$ 12,091,630	16.4%	10.0%	6.4%	$ (4,700,000)	$ 7,391,630	10.0%
Diamond Hill Large Cap	$ 8,068,527	10.9%	12.0%	-1.1%	$ 800,000	$ 8,868,527	12.0%
Segall Bryant Small Cap	$ 7,200,685	9.8%	7.0%	2.8%	$ (2,000,000)	$ 5,200,685	7.1%
Total Non US Equity	$ 19,415,303	26.3%	31.0%	-4.7%	$ 3,400,000	$ 22,815,303	31.0%
Earnest International Equity	$ 7,647,330	10.4%	12.0%	-1.6%	$ 1,200,000	$ 8,847,330	12.0%
UBS Emerging Markets HALO	$ 4,455,814	6.0%	7.0%	-1.0%	$ 700,000	$ 5,155,814	7.0%
Impax Global Resource Fund	$ 7,312,159	9.9%	12.0%	-2.1%	$ 1,500,000	$ 8,812,159	12.0%
Total Fixed Income	$ 19,687,425	26.7%	32.0%	1.7%	$ 3,850,000	$ 23,537,425	31.9%
IRM Core Bond	$ 6,370,355	8.6%	10.0%	-1.4%	$ 1,000,000	$ 7,370,355	10.0%
SSgA TIPS	$ 6,140,494	8.3%	7.0%	1.3%	$ (1,000,000)	$ 5,140,494	7.0%
SSgA US Treasuries	$ -		7.0%		$ 5,150,000	$ 5,150,000	7.0%
Manulife	$ 7,176,576	9.7%	8.0%	1.7%	$ (1,300,000)	$ 5,876,576	8.0%
Total Multi Asset	$ 7,235,800	9.8%	8.0%	-8.2%	$ (1,350,000)	$ 5,885,800	8.0%
PIMCO All Asset	$ 7,235,800	9.8%	8.0%	1.8%	$ (1,350,000)	$ 5,885,800	8.0%

Data as of January 31, 2021

NEPC

INVESTMENT DISCLOSURES

- **Information Disclaimer**
  - Past performance is no guarantee of future results.
  - All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
  - NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
  - Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
  - This report is provided as a management aid for the client's internal use only. Information contained in this report does not constitute a recommendation by NEPC.
  - This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.

- **Reporting Methodology**
  - The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
  - Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
  - For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
  - This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

**BOSTON
PUBLIC
LIBRARY**

TECHNOLOGY PLAN

March 2021

Abstract

This document serves as the official technology plan for the Boston Public Library. At a high level it serves to create alignment and understanding across the organization of how the IT department operates and what it is focused on by sharing our mission and goals around technology. Each goal is subsequently broken down into various initiatives that are being done or are being planned in support of the department's goals.

Kurt Mansperger
kmansperger@bpl.org

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SECTION I – EXECUTIVE SUMMARY

Libraries provide vital access to cultural, educational, and informational materials. Technology has become integral to the services libraries provide and can be used to create efficiency and effectiveness in how services are delivered. This plan focuses on the continuing renewal, consolidation, revitalization, and expansion of technologies to support delivery of evolving library services. The technological needs addressed in this plan are encompassed within the following goals:

- Focus on Impact / Outcomes
- Extend the Library's Reach
- Expand Educational Opportunities
- Develop Spaces that Meet Evolving Patron Needs
- Enable One Library
- Drive Organizational Efficiency
- Improve IT Fundamentals

Most of the initiatives that make up these goals require cross functional teams to implement and would not be achievable otherwise. This plan is used to create alignment and understanding across the organization of technological priorities.

While some of these initiatives involve acquiring and implementing new tools, many involve reviewing existing infrastructure and determining modifications that will improve efficiency in service delivery and improve the management and maintenance of systems.

Significant and continued monetary support and staffing resources are required for libraries to keep current technology viable and to incorporate new technologies at an accelerated rate. This plan also details the cost required to achieve these goals.

BACKGROUND

The Boston Public Library (BPL) holds more than twenty-three million items, estimated to be among the three largest collections in the country, including books, maps, manuscripts, letters, drawings, and other original works dating back as early as the tenth century. There are approximately 450 staff and three partner organizations throughout 27 BPL locations.

The Boston Public Library provides extensive online services to citizens throughout the Commonwealth of Massachusetts, including electronic books, audiobooks, research databases, newspapers, journals, and

BOSTON PUBLIC LIBRARY

more. Additionally, online programming and digitized special collections are available for learners and researchers worldwide.

The Boston Public Library is also the owner and operator of the Metro Boston Library Network (MBLN), which is a member organization that facilitates the sharing of collections, staff and technology resources across members. In addition to the BPL, the MBLN includes Malden Public Library, Chelsea Public Library, 26 Boston Public School libraries, Fisher College library, and The Newman School's library. Strategic and technology direction for the network is managed by BPL's IT leadership and the MBLN Policy Advisory Group.

MISSION

The following mission statement is specifically for the IT department. It is intended to create alignment and understanding across the organization on how the IT department strives to operate and prioritize work. Additionally, it enables everyone working on technology initiatives to understand the direction they should be moving in and organizing around.

IT Department Mission Statement

The IT department should provide a comprehensive first-class suite of services to external and internal library patrons, partners and employees. Library staff should see the IT department as a strategic business partner that can help them innovate, become more efficient and support them in their success.

The department should run efficiently and securely with a drive for results, transparency, accountability and collaboration. The department should strive to become a model for other libraries (and community-based non-profits) on how to effectively provide meaningful and impactful technological services to a diverse population of patrons. Patrons should feel inspired and supported by technology at the library.

TECHNOLOGY GOALS

The following technology goals were developed through an evaluation of our current state, benchmarking against other libraries and similar organizations, and reviewing where more work is needed to achieve our strategic organizational priorities. These goals consider Technology at the library as a whole and is not limited to what the IT department can achieve on its own. Collaboration with other departments will be crucial to successfully achieving these goals.

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These goals incorporate recurring themes that support the BPL's organizational priorities and enable other teams to more effectively deliver their services. The goals are in support of our programs and services (in-person and online), enable the Library's operations to run seamlessly (process and infrastructure improvements), and help eliminate the digital equity gap. The timeframe for these goals is 3-5 years.

Technology Goals

1. **Focus on Impact / Outcomes** – Without a target in mind, knowing where to invest time or money is just a guess. Decisions throughout the library should be informed by data and/or measured against predefined metrics. Technology should be used to streamline data collection and to analyze results to obtain insights. Predetermined metrics should be continually tracked and published to inform decisions, measure initiatives and communicate our impact.

2. **Extend the Library's Reach** – As we continually look to reach more patrons, technology has become essential in supporting that objective. Digital content and online programming improve accessibility, but many patrons also need technology hardware and/or access to the internet to be able to use those services. We should expand our ability to be <u>free to all</u> by reaching patrons where they are and in a format that works best for them, while giving them the support they need.

3. **Expand Educational Opportunities** – As the old adage goes, give a man a fish and feed him for a day - teach a man to fish and feed him for a lifetime. When it comes to technology, providing devices and internet access are often not enough to have meaningful impact. Patrons also need access to and be fully aware of training opportunities that meet their needs (basic computer usage, workforce development, online meeting fundamentals, emerging technologies, awareness of local resources, understanding voting rights, etc.). While this goal focuses on patrons, it encompasses technology education for staff as well. With technology continually changing, it is important for staff to embrace continuous learning around technology.

4. **Develop Spaces that Meet Evolving Patron Needs** - Libraries are not just places to go to get a book, they are so much more. The physical library provides a safe and welcoming place to learn, relax, and connect. As the way that people work and learn changes, so must the place they do it in – their co-working office, research library, and event space. Meanwhile, flexible physical spaces can be achieved with technology to increase access and usability while also creating a more personalized experience at scale.

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5. **Enable One Library** – Patrons should have a seamless and familiar experience regardless of what location they visit or which online service they use. Digital transformation of how staff operate can create improved communication, collaboration and equity among staff, which in turn improves the services we provide to patrons. Getting 27 locations with 450+ employees to operate as if they are one requires excellent communication and collaboration across all locations and roles.

6. **Drive Organizational Efficiency** – Technology should be viewed as a differentiator that can be leveraged to enable the organization to continually innovate and exceed their goals. Technology should support staff in being able to focus more on their expertise by streamlining operational processes or hurdles.

7. **Improve IT Fundamentals** - Because of the increasing pace of technological change, the department will need to continually change over time. To enable innovation, there needs to be a strong foundation of systems and people. Solid processes should be in place for maintaining key patron functions without downtime while keeping hardware and software up to date, maintaining information security, and being prepared for disasters. IT staff will also need to continually develop expertise, in both technology and professional skills to ensure that the library can keep pace with changing technology.

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INITIATIVES

The following table summarizes the initial set of initiatives that are associated with each goal. Each initiative includes a rough indicator of benefit, effort, and cost. A detailed overview of each initiative exists in the next section.

Key: Low ○ ◔ ◑ ◕ ● High

Initiative	Patron / Staff Benefit	Staff Effort	Estimated Cost
GOAL: FOCUS ON IMPACT & OUTCOMES			
Refine and Align on Key Performance Indicators	◔	◔	$
Implement Reliable Data Analytics Platform	●	◔	$$
Streamline Data Collection	◑	◑	$$$
GOAL: EXTEND THE LIBRARY'S REACH			
Increase Technology Access (Wi-Fi, Hotspots, Chromebooks)	●	◑	$$$$
Expand Advance Technology Lending	◕	◑	$$
Enable Online Financial Transactions	◔	◔	$$
GOAL: EXPAND EDUCATIONAL OPPORTUNITIES			
Technical Support for Patrons	●	◔	$

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Floating Programming Kits	◕	◐	$$
Staff Technical Training and Support	●	◔	$
GOAL: DEVELOP SPACES THAT MEET EVOLVING PATRON NEEDS			
Activate Outdoor Spaces	◐	◔	$$
Enable Meeting Rooms for Videoconferencing	◕	◐	$$$
Improve Digital Signage	◐	●	$$$$
GOAL: ENABLE ONE LIBRARY			
Improve Internal Document Management	◕	◐	$
Improve Process for Tracking Key Relationships	◕	◕	$
Refine Integrated Web Experience	◕	◐	$
GOAL: DRIVE ORGANIZATIONAL EFFICIENCY			
Timesheet Submission Workflow	●	◐	$
Employee Transition Integration with IT	●	◕	$
Room & Resource Booking Procedures	◐	◐	$
GOAL: IMPROVING IT FUNDAMENTALS			

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Revise Business Continuity Plan	●	◕	$$
Establish Technology Refresh Schedule	●	◐	$$$$
Improve Data Center Infrastructure	◐	◕	$$$
Increase Information Security Measures	◐	◐	$
Professional Development for IT Staff	◔	◐	$

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SECTION II – INITIATIVE DETAILS

The goals above have been broken down into the following initiatives and activities. Each initiative includes a description with details on the opportunity and benefits as well as associated activities, staffing support needed and an estimated amount of investment needed to implement. These initiatives may not be comprehensive and are subject to change over time as technology and operational realities change.

Each initiative has key department involvement and an estimated cost. IT department involvement is assumed with every initiative. Teams within the IT department will be assigned ownership as part of the implementation. Estimated costs do not include staff time.

FOCUS ON IMPACT & OUTCOMES

Focus on Impact / Outcomes – Without a target in mind, knowing where to invest time or money is just a guess. Decisions throughout the library should be informed by data and/or measured against predefined metrics. Technology should be used to streamline data collection and to analyze results to obtain insights. Predetermined metrics should be continually tracked and published to inform decisions, measure initiatives and communicate our impact.

REFINE AND ALIGN ON KEY PERFORMANCE INDICATORS

The primary numbers currently being reported are REACH numbers. Additionally, data is aggregated annually for ARIS, PLA, and the City. These numbers should be available for staff to easily review and compare against previous years. While these numbers include what is currently collected and shared, they should be re-evaluated and refined to better measure and understand the impact and outcomes the library has in the communities being served.

This initiative includes the following activities:

1. Identify organizational categories of performance / measurement
2. Review and report on Key Performance Indicators (KPIs) that other libraries are using
3. Review existing statistics and evaluate their value
4. Identify any new metrics that would be valuable to track

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5. Develop pro-active internal communication strategy for any KPIs: what they measure (and don't), what they are used for (and not)
    a. Obtain feedback and make revisions after feedback period
    b. The more consensus around KPIs, the more they will be used
6. Encourage staff to ask for data that will help them in their decision-making process
7. Develop practice of continually reporting on and measuring performance against the identified KPIs

This initiative is not only about redefining what metrics are useful to track, but also developing a mindset among staff about continually paying attention to those metrics and looking for ways to improve them.

The Data Analyst position will be a key role in this initiative.

Key Department Involvement: *Leadership, Department Heads, Staff*

Estimated Cost: *$0*

IMPLEMENT RELIABLE DATA ANALYTICS PLATFORM

Currently the data within the organization is somewhat siloed in that only specific people have access to run different types of reports and it's not consolidated into one system for streamlined analysis. There have been mild attempts to improve the way the library analyzes data, but there needs to be dedicated time and resources put towards the effort to create sustainable change on how data is accessed and analyzed.

This initiative includes the following activities:

1. Engage with third party who is experienced in developing a data warehouse
2. Develop the feeds into the data warehouse and remove any personally identifying information as a part of the data feeds
3. Load past data into the data warehouse which may no longer be accessible through accessing the source data directly
4. Determine external data sources that would be important to include and determine how best to integrate ongoing
    a. It is important to understand BPL in the context of other service providers in the Boston area and also measure against similar sized libraries
    b. It is also important to understand the communities being served through census data, etc.
5. Develop criteria for selection of analytics tool to enhance data-driven decision making
6. Evaluate and implement a suitable data analysis platform

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7. Establish dashboard with key information for various types of roles throughout the library: Branch, Circulation, Programming, Technology Usage, etc.
    a. Opportunity for developing best practices that can be shared and scaled up or down for consistency of reporting and alignment on predefined KPIs
8. Enable staff to run their own reports or develop procedure for requesting data

The Data Analyst position will be a key role in this initiative.

Key Involvement: *Leadership, Department Heads, Training*

Estimated Cost: *$10,000 Upfront, $12,000 Annually*

STREAMLINE DATA COLLECTION

In many cases, the data exists and only needs to be made more accessible to staff. In other cases, the collection is prone to human error due to the way in which the data is collected. Staff can be anxious about inaccurate numbers being used to make budget decisions. If the data being collected cannot be trusted, then the analysis and reporting of related numbers will not be useful. The underlying data that feeds the KPIs should be reviewed for uniformity, reliability and efficient access.

For instance, the collection of attendance for in-person visits and programming attendance is error prone in that there are many different ways that the data is being captured throughout the library. These attendance numbers are used today to help determine budgets for the central library and its branches.

There should be a project to assess and potentially implement a sensor-based people counting system that is implemented systemwide. The data should automatically feed into the analytics platform for reliable reporting. Newer technology (3D imaging) can also more accurately count metrics beyond whether a person is in attendance, such as whether the person is an adult or child.

Other data collection methods to be reviewed include the following metrics:

- In-Person visits
- Programming attendance metrics
- Reporting of reference questions so numbers are calculated similarly in branches and central

This initiative includes the following activities:

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1. The underlying data that feeds the KPIs should be reviewed for uniformity, reliability and efficient access
2. Data collection procedures that are error prone or inefficient should be revisited
3. Implement new approach for streamlined data collection. Examples include:
   a. People Counters
   b. Improved data feeds from external sources
   c. Improved form for manually provided data

Key Department Involvement: *Facilities, Related staff depending on collection method*

Estimated Cost: *$50,000 Upfront, $10,000 Annually*

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EXTEND THE LIBRARY'S REACH

8. **Focus on Impact / Outcomes** – Without a target in mind, knowing where to invest time or money is just a guess. Decisions throughout the library should be informed by data and/or measured against predefined metrics. Technology should be used to streamline data collection and to analyze results to obtain insights. Predetermined metrics should be continually tracked and published to inform decisions, measure initiatives and communicate our impact.

Extend the Library's Reach – As we continually look to reach more patrons, technology has become essential in supporting that objective. Digital content and online programming improve accessibility, but many patrons also need technology hardware and/or access to the internet to be able to use those services. We should expand our ability to be <u>free to all</u> by reaching patrons where they are and in a format that works best for them, while giving them the support they need.

INCREASE TECHNOLOGY ACCESS (WI-FI, HOTSPOTS, CHROMEBOOKS)

During the Coronavirus pandemic, the limitations put on regular life have amplified the importance of access to technology hardware and reliable internet. Those without connectivity have been further marginalized through the pandemic. The library has needed to rethink public access to technology. Beyond technology programming, patrons need access to computers and internet in a safe space. With the pandemic, that generally means outdoors or in patron homes.

We need to continue to support the digital literacy needs of targeted communities through expanding laptop lending, hotspot lending, and outdoor WiFi. The hardware won't solve the need without technology programming and support structures to guide patrons through the use of this equipment.

Hotspots (~$69,000 / yr)

There are currently 225 Hotspots in circulation. This quantity should increase to the point where the waitlist regularly has less than 10 people waiting for a hotspot (currently 40).

In early 2020, the hotspot service was bid out and we were able to secure a lower cost than previous years at $22.99 per device per month. New devices (and cases) with the lower priced plan were circulated into the system in September 2020 to replace older equipment.

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There needs to be a funding source determined to ensure that this program continues to provide value to our patrons. The yearly cost of service is ~$63,000 per year at the current volume or if we were to target having 250 hotspots circulating, the cost would be $69,000 per year.

Outdoor Public Wi-Fi (~$985/yr)

All of our buildings have high speed internet running through them, but our public wireless network was previously focused on the spaces inside our buildings. Throughout the pandemic, we have expanded the public WiFi coverage area to include exterior spaces that are suitable for someone to sit at while connecting from outside or after hours, while still being on our property. Metal street signs were placed nearby to alert patrons to the expansion. This effort was largely funded by a donor through the BPL Fund.

Seventeen Meraki MR86 Wi-Fi 6 outdoor access points were installed at the following locations:

- Brighton
- Codman Square (2)
- Connolly
- East Boston (2)
- Egleston Square
- Grove Hall
- Honan-Allston
- Hyde Park
- Lower Mills
- Mattapan
- Parker Hill (2)
- Roxbury
- South End
- West Roxbury

South Boston has an external wireless access point in the rear courtyard, which is less accessible while our buildings are closed. Remaining branches were not included due to the outdoor space not being suitable. While not ideal, patrons are able to connect to Wi-Fi from outside of our other buildings if they are close to a window.

The ongoing cost of this expansion is about $86/year/device with new equipment implemented every 3-5 years or so at roughly $1,200 per device. However, this equipment is covered through the universal service e-rate program which covers 85% of the cost, making the cost to the library roughly $985 per year for the additional access points since the internet backbone cost is the same regardless of the number of units.

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Chromebook Home Connectivity Kit ($48,450/yr)

At the time of writing, we are in the process of rolling out a Chromebook lending program for patrons to be able to take home a Chromebook and hotspot. This pilot program is pairing together a hotspot with the Chromebook under the belief that someone in need of a laptop likely does not have an internet connection at home either. This belief will be validated through surveys during the pilot and a determination will be made as to whether a hotspot will continue to be lent along with the Chromebook.

The Chromebook is lent in a BPL branded laptop bag along with a mouse, hotspot, quick start guide, and associated charging cables. The quick start guide includes a contact number for support (Community Learning Team) and promotes complimentary programs offered by the library, other city department, and/or partners.

Additionally, the data regarding the location and volume of requests for this hardware will be leveraged to understand community needs and determine opportunity for promoting/growing or offering other complimentary services. Based on survey feedback, the program may change and adapt to better fit patron needs.

The ongoing success of this program depends on the collaboration between numerous departments and locations (IT, Community Learning, Tech Services, Branch Staff, Circulation, Shipping). The frontline staff circulating the devices and directly interacting with patrons are also likely to be providing limited support to patrons.

It is likely that the heavy use of these devices will lead to a need for circulating in new Chromebooks each year. The lending kits include Chromebooks ($300), enterprise licensing ($25), hotspot costs ($23/month or $276 per year), mice ($10) and laptop bags ($35). Each kit will cost around $646 per kit per year. At 75 units, the cost will be $48,450 per year.

Technology Programming and Support

This hardware alone will not be successful without the appropriate support structures in place. For more on that, see the section Technical Support for Patrons.

Key Department Involvement: *Community Learning, Branch Staff, Circulation, Shipping, Tech Services, Communications*

Estimated Cost: *$117,450 Annually*

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EXPAND ADVANCED TECHNOLOGY LENDING

Many of the library's technology programs target beginners. There is an opportunity for reaching more advanced technology users, especially as the sharing economy has become more commonplace. We should look for opportunities to support patrons who are looking to level up within their career by getting experience with more advanced technology or allow more active membership through the lending of more advanced technology equipment. Meanwhile, we can encourage creativity and personal development of patrons without requiring them to be in our physical spaces by expanding the technology lending offerings, which also increases access to create greater impact.

Technology Lending Examples:

- Remote Access to Advanced Software
    - Ex: Creative Cloud on VDI
- Purpose Driven Lending Kits:
    - Podcasting
    - Music Editing
    - Professional Photography
    - Action Photography (Go Pro, 360 Camera)

This initiative includes the following activities:

1. Obtain metrics for popular lending kits offered by other libraries
2. Determine and implement training and resources for staff to provide guidance to patrons
3. Procure lending kit equipment and process for lending similar to a hotspot

Key Department Involvement: *Adult Learning, Branch Staff, Circulation, Shipping, Tech Services, Communications*

Estimated Cost: *$10,000 Annually*

ENABLE ONLINE FINANCIAL TRANSACTIONS

Patrons should be able to have a contactless way to pay for fines or fees without being in one of our buildings. This change would enable patrons to pay for fines remotely and not have an in-person visit block them from borrowing e-books.

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Additionally, when patrons are in the building, they should be able to complete transactions with their own devices and minimize the dependencies on hardware and staff. Reducing the need for staff to manage money on patron accounts frees them up to focus on assisting patrons with other more impactful services.

This initiative includes the following activities:

1. Determine most effective way to implement paying fines or fees online
    a. Note: Polaris supports this functionality through an integration with PayPal. BiblioCommons also has similar functionality and is more expensive, but more integrated into the end user experience.
2. Implement with thoughtful attention to key integration points and user flows:
    a. Update patron communication that references a fine or fee to direct them to process the payment online
    b. Streamline flow from fine and fees page on patron account
3. Consider flow for adding money to the pay for print account as well

Key Department Involvement: *Web Services, Accounting*

Estimated Cost: *$5,000 Annually*

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EXPAND EDUCATIONAL OPPORTUNITIES

Expand Educational Opportunities – As the old adage goes, give a man a fish and feed him for a day - teach a man to fish and feed him for a lifetime. When it comes to technology, providing devices and internet access are often not enough to have meaningful impact. Patrons also need access to and be fully aware of training opportunities that meet their needs (basic computer usage, workforce development, online meeting fundamentals, emerging technologies, awareness of local resources, understanding voting rights, etc.). While this goal focuses on patrons, it encompasses technology education for staff as well. With technology continually changing, it is important for staff to embrace continuous learning around technology.

TECHNICAL SUPPORT FOR PATRONS

There are a number of efforts that are already having a huge impact educating patrons: Tech Goes Home, Grow with Google, Community Learning Phone Support, Public Computing, etc. These efforts can be leveraged further through the use of technology.

This initiative includes the following activities:

1. Virtual technology assistance provided through online chat and/or text
    a. Allows for reaching and supporting people in their homes and with their own technology
    b. Community learning, branch staff, and tech central staff could provide support
    c. Videoconferencing with screensharing also offered as a part of the workflow
2. Introductory computer assistance expanded to enable more virtual assistance
    a. Improve the framing of tech central to encourage more patrons to seek assistance with their own device
    b. Central staff enabled to assist patrons in branches if the expertise is not available in the branch
3. Simple video tutorials developed for patrons on computer use, printing, etc.

Key Department Involvement: *Community Learning, Branch Staff, Training, Communications, Web Services*

Estimated Cost: *$0*

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FLOATING TECHNOLOGY PROGRAMMING KITS

There is an opportunity for reaching more advanced technology users through offering more unique programming offerings. Currently, more advanced technical classes are offered in the makerspaces throughout the system but there is no reason why many of those classes cannot be offered throughout the system.

This can be accomplished through developing technology programming kits, which can be done with existing equipment and/or expanded with new equipment. These system wide programming tech kits would provide the tools and guidance needed to offer more advanced classes / workshops throughout the system. The kits could be positioned so that staff at the location it is sent to could run the class or it could be sent with an instructor.

This approach allows for more effective use of resources by having technology and programming information float to wherever a class is being offered next. There is also the potential for other MBLN member libraries to leverage equipment when not in use by the BPL.

Some examples include:

- Podcasting,
- Music Editing,
- Robots,
- VR,
- etc.

The deployment of a program like this would require cross functional collaboration, support for the equipment, basic training, and potentially the expertise could be provided through partnerships.

This initiative includes the following activities:

1. Review programming requests and priorities
    a. Programs that support workforce preparedness and development, civic engagement, and public health
    b. Programs that engage youth in education, culture, civics, STEAM, and social and emotional learning
2. Determine kits that should be offered and equipment/software necessary
3. Acquire hardware needed for programming kits
4. Develop programming guides
5. Assemble and begin circulating kits through the system for programming

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Key Department Involvement: Adult Programming, Youth Technology Team, KBLIC, Training, Branch Staff*, Training, Communications*

Estimated Cost: *$15,000 Annually*

STAFF TECHNICAL TRAINING AND SUPPORT

There are many tasks which now require a help desk ticket that could potentially be self-served by staff if staff met a higher baseline technical proficiency level and technical system documentation was better organized and more user friendly. In many roles, the technical ability of staff can also have a significant impact on providing excellent support for patrons. This initiative is also important for business continuity.

There needs to be improved documentation, onboarding, and continuous development of staff to be able to meet this goal. Recording instructional content in a training platform may be ideal as it is a great reference and could be incorporated into various processes with HR, like onboarding people to a new role or general development. The organization should support a culture where onboarding, training and professional development are seen as essential and more structure is built around it.

This initiative includes the following activities:

1. Establish baseline proficiency of all staff
2. Identify gaps in existing training
3. Develop training to fill the gaps
4. Establish process for ongoing professional development
5. Integrate technology training into issuing new technology or providing access to new tools
6. Improve technology system documentation and availability to staff
7. Develop more self-service options for staff when interacting with IT

Key Department Involvement: Training, HR for defining minimum competency

Estimated Cost: *$5,000 Annually*

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DEVELOP SPACES THAT MEET EVOLVING PATRON NEEDS

Develop Spaces that Meet Evolving Patron Needs - Libraries are not just places to go to get a book, they are so much more. The physical library provides a safe and welcoming place to learn, relax, and connect. As the way that people work and learn changes, so must the place they do it in – their co-working office, research library, and event space. Meanwhile, flexible physical spaces can be achieved with technology to increase access and usability while also creating a more personalized experience at scale.

ACTIVATE OUTDOOR SPACES

Throughout the pandemic, the library has positioned itself to have resources be more accessible outside of our building through improved online collaboration, outdoor wi-fi, etc. This positions us to capitalize on more programs that can happen outside of our walls.

This initiative includes the following activities:

1. Identify, evaluate and implement opportunities (if feasible) for:
    a. Outdoor workstations (Ex: https://culturehouse.cc/)
    b. Outdoor programming
        i. Provide technology to support staff and make more viable (portable speaker, microphone, etc)
    c. Expand bibliocycle or similar
    d. Engagement within marginalized communities
        i. Review barriers to existing BPL locations to help identify opportunity
        ii. Consider 'pop-up' libraries or lockers to fill needs in areas that aren't currently being met

Key Department Involvement: Programming, Library Services, Facilities, Security, Communications, Collection Development

Estimated Cost: *$40,000 Upfront, $5,000 Annually*

ENABLE MEETING ROOMS FOR VIDEOCONFERENCING

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Conference rooms and programming spaces throughout the system should be upgraded to include video conferencing capabilities w/ remote management (RDM). Doing so will not only support the various needs of patrons but will also position us to more readily offer live programming to be streamed to other locations, make them more accessible, make recordings available, and allow for staff to more easily join meetings or trainings remotely from their own locations.

This initiative includes the following activities:

1. Meet with branch staff, community learning, training, and events staff to identify needs
2. Review video conferencing solutions that are flexible and determine ideal solution that can be implemented system wide
3. Implement test conference room for feedback and refinements
4. Prioritize initial implementation in the Commonwealth Salon, Exchange, the Mezzanine Classroom, and the Children's library.
5. Review with branch staff for feedback
6. Focus on the ease of use and make any enhancements to support
    a. Software configuration, signage, etc.
7. Rollout to all locations
8. Identify additional potential service offerings:
    a. Loaning paid zoom accounts to patrons (Queens)
    b. Establish spaces for virtual private calls such as health screenings, interviews, court hearings, etc. (Digital Phonebooths)
9. Determine any policy revisions that should be made

Key Department Involvement: Branch Staff, Community Learning, Events, Facilities, Training, Communications

Estimated Cost: *$75,000 Upfront, $15,000 Annually*

IMPROVE DIGITAL SIGNAGE

This initiative includes the following activities:

1. Establish digital signage and interactives roadmap
2. Complete evaluation of needs for the Johnson welcome center
    a. What are patrons' primary needs when reaching the welcome center and how do we address them?

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     b.   Wayfinding, Event notification, Experiencing the collection and seeing representation

3. Evaluate room signage and integrate with room booking software
4. Leverage more generic products where it makes sense
5. Focus on ease of use for non-technical staff managing content
6. Leverage robust platforms over custom applications
7. Review related policies and determine any revisions that should be made

Key Department Involvement: Branch Staff, Community Learning, Events, Facilities, Training, Communications, Special Collections, Content Discovery, Collection Development

Estimated Cost: *$200,000 Upfront, $20,000 Annually*

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ENABLE ONE LIBRARY

Enable One Library – Patrons should have a seamless and familiar experience regardless of what location they visit or which online service they use. Digital transformation of how staff operate can create improved communication, collaboration and equity among staff, which in turn improves the services we provide to patrons. Getting 27 locations with 450+ employees to operate as if they are one requires excellent communication and collaboration across all locations and roles.

IMPROVE INTERNAL DOCUMENT MANAGEMENT

The library currently stores documents in a number of different places (Shared Network Drives, Staff Intranet, Personal Computers, etc). This initiative will involve organizing our document management strategy so that it is more intuitive and searchable for staff and also has appropriate policies and procedures in place to manage centrally.

This initiative includes the following activities:

1. Complete any additional document management changes based on Teams Survey responses
    a. Ensure that training on document management is completed
2. Complete activity to determine logical grouping of information and priorities
3. Evaluate appropriate platform for replacing staff intranet
4. Determine most frequently accessed content on the staff intranet and determine migration of that content into logical grouping with SharePoint / Teams / Intranet replacement
5. Determine approach for establishing enterprise document management strategy
    a. Organization of content
    b. Retention schedule for documentation and implement tool for managing
    c. Metadata
    d. Workflow improvements
    e. Backup and retention policies
    f. Improved searching capability
6. Implement structure and procedures to maintain ongoing
    a. Include how we work with the City Archives in document retention as a City of Boston department

Key Department Involvement: All Staff

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Estimated Cost: $20,000 Upfront

IMPROVE RELATIONSHIP MANAGEMENT

The library generally tracks contact information via emails and/or spreadsheets and is isolated for use at a specific point in time. There needs to be a system in place that allows for staff to get a complete view of the past events, communications, etc that involve a strategic/community partner, presenter, performer, author, etc. The goal is to improve the experience and relationship of those we interact with outside of staff and patrons and have a unified view of who might be best to work with on an upcoming initiative or project .

This initiative includes the following activities:

1. Complete evaluation of CRM tools (LibCRM, Salesforce, MS Dynamics, etc.)
    a. Should indicate Main POC at partner organization and on our staff
    b. Streamlined integration with email to limit barriers for storing up to date information
2. Implement CRM solution and migrate historical data into the system
    a. Every year a community outreach program partner spreadsheet is made
    b. Up to date listing of friends group contacts
    c. Primary patron contact info at other city departments
3. Complete training for key staff that will use the platform
4. Determine key integrations that should exist and implementation strategy

Key Department Involvement: Programming, Partnerships, Community Learning, Web Services

Estimated Cost: $4,000 Annually

REFINE INTEGRATED WEB EXPERIENCE

The existing website does a great job at providing streamlined catalog and event search, but could be improved to capture more of what the library does and improve integrations between other systems and services. There are a number of new systems being implemented or on the roadmap to be implemented and integration with the existing website will be key to the patron experience.

This initiative includes the following activities:

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1. Review user flows for new and existing patron systems and determine potential improvements
   a. Make sure the experience is seamless from catalog search to here.
   b. Patrons don't know what they are looking for or that it is an archive or finding aid.
   c. Branding should be improved on Polaris interface
   d. Digital Repository Services should be more integrated into the patron search
   e. Patron email notifications off of website actions (user registers for e-card, etc.)
2. As new systems are brought online, map back to the patron experience and common user flows and determine improvement areas
   a. Current or Planned Collections System Implementations
      i. ArchivesSpace – Archives / Finding Aids (Migration off Archon)
      ii. Aeon – Special Collections Tracking and Reservations
      iii. TMS – Arts Collections Management
   b. Unified search across systems
   c. Appropriate integration of data across systems

Technology should support other department's processes and services to allow them to be more efficient and reach more patrons while also having appropriate safeguards in place to protect our physical and digital assets. Meanwhile, our expertise and impact should be shared with other libraries to help them be more effective while further establishing the Boston Public Library as a model to follow.

Key Department Involvement: Web Services, Special Collections, Content Discovery

Estimated Cost: *TBD – Requires more research into solutions*

DRIVE ORGANIZATIONAL EFFICIENCY

Drive Organizational Efficiency – Technology should be viewed as a differentiator that can be leveraged to enable the organization to continually innovate and exceed their goals. Technology should support staff in being able to focus more on their expertise by streamlining operational processes or hurdles.

TIMESHEETS SUBMISSION WORKFLOW

The existing timesheet submission process is somewhat antiquated as it involves emailing PDFs that are either electronically signed or physically printed, signed and scanned. This workflow should be streamlined to minimize the processing time spent by staff each week for both completing the form and populating our HR system with the appropriate information.

This initiative includes the following activities:

1. Review timesheet workflows that other city departments have in place which were previously approved by HR and legal
2. Determine ideal new workflow and identify any necessary training
    a. Mobile friendly
    b. Streamline data entry and digital signatures
    c. Consolidate data from all timesheets into format that is easy to load/integrate directly into PeopleSoft
3. Implement new workflow
4. Complete training
5. Rollout to all staff

Key Department Involvement: Human Resources, CoB Human Resources

Estimated Cost: *$2,000 Annually*

EMPLOYEE TRANSITION INTEGRATION WITH IT

Employee transitions (Hiring, Promotions, Terminations) are loosely integrated with IT and training and often require additional workflow from the hiring manager. This process should be streamlined to improve the employee experience and minimize chances for missed steps in the process.

This initiative includes the following activities:

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1. Review existing workflow and determine key integration points between systems
2. Map roles throughout the system to key IT related access for those roles
    a. Active Directory
    b. Shared Network Drives
    c. Distribution Lists
    d. VPN
    e. Laptop vs Desktop
    f. Cellphone
    g. Desk Phone
    h. MS Team
    i. BAIS Financial or HCM
3. Build automated emails to provide guidance on:
    a. New hires on how to interact with IT (HD Tickets, What we can and can't support, etc.)
    b. Terminations – manager and staff on how to return equipment, manage mailboxes, personal files, etc.
4. Integrate into the HR orientation process to provide basic technology guidance
5. Referral to trainer as needed for understanding on equipment / tools
6. More tightly integrate HR system and active directory to automate permission changes based on actions (Termination – Revoking Access, etc)

Key Department Involvement: Human Resources, Training, CoB DoIT

Estimated Cost: *$0*

ROOM & RESOURCE BOOKING PROCEDURES

If a patron would like to use a shared space, there are a variety of different systems that they can use to book that space. The rooms on the mezzanine in Central require coordinating via email with the events team. A number of branches reserve study rooms through a shared google calendar. This process should be streamlined and integrated with our systems so that a patron could potentially book a space available and have it confirmed without staff input.

This initiative includes the following activities:

1. Build automated process for patrons to request access to associated spaces
    a. Implement LibCal or similar solution for spaces that are bookable by the public

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      i. The KBLIC uses http://bpl.libcal.com/reserve/instruction/opentechlab

2. Integrate with new event management system (Tripleseat)
3. Configure each meeting space as a resource in exchange and snyc bookings so there is an up-to-date record of truth that any staff can access

Key Department Involvement: Events, Programming, Library Services, Training, Web Services

Estimated Cost: *$0*

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IMPROVE IT FUNDAMENTALS

Improve IT Fundamentals - Because of the increasing pace of technological change, the department will need to continually change over time. To enable innovation, there needs to be a strong foundation of systems and people. Solid processes should be in place for maintaining key patron functions without downtime while keeping hardware and software up to date, maintaining information security, and being prepared for disasters. IT staff will also need to continually develop expertise, in both technology and professional skills to ensure that the library can keep pace with changing technology.

REFINE BUSINESS CONTINUITY PLAN

We must expect -- and plan for -- the unexpected, so that our library can continue to operate with minimal disruptions to patrons, even when faced with operational or communications challenges.

As technology has evolved, our resiliency / disaster recovery plan and processes are in need of an update. The IT department is in the process of upgrading the UPS backup for the data center and there is a DR site that needs to be decommissioned and replaced with cloud infrastructure that is located further away from Boston.

This initiative includes the following activities:

1. Detail current state backups, disaster recovery and resiliency architecture and share with staff
2. Include detail on the backup plans in place for different systems and different types of outages and how long of an outage would currently be protected against
    a. Phone System (Internet, Power)
    b. Network Switches (WiFi / Ethernet)
    c. Key Applications
        i. Active Directory
        ii. Polaris
        iii. Email
    d. Security Cameras
3. Identify key objectives for resiliency
    a. Consider the Library's role after a catastrophic world event
    b. Determine acceptable metrics for downtime by system
        i. Need for immediate failover vs ~X hours of downtime acceptable while restoration occurs

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   c. Optimize resources for operational priorities
4. Plan for continuing operations during a power or data disaster
5. Ability to test and run dress rehearsals
6. Test and Code Infrastructure
   a. All custom code should be in a repository managed by BPL (GitHub)
   b. We should have test environments we can spin up and down throughout as well
   c. Procedures for deployments should be automated
7. Determine strategies for staff when there is an outage
   a. Training for staff on how to mobilize if there is a service disruption
   b. Ex: Phone outage leads to Dialpad to cover line while service restored

Key Department Involvement: Web Services, Repository Services, Security

Estimated Cost: *$10,000 Annually, will involve some cost shifting*

ESTABLISH TECHNOLOGY REFRESH SCHEDULES

Technology equipment throughout the library should be kept up to date. Branches/departments should know where they are in the refresh cycle and when they will get new technology hardware (~3-6 years).

With 25 Branches in the Boston Public Library System, there is a tendency towards uneven distribution of resources, especially in the Audio-Visual equipment installed at each branch.

To help alleviate this inequity, we are implementing cyclic refresh of each branch library's systems. Every refresh, we will evaluate each locations' equipment usage, and identify and address any malfunctions or shortcomings within their systems.

1. Staff Computers / Laptops
2. Patron Computers / Laptops / Chromebooks
3. Printers
4. Audio/Video Equipment
5. Catalog Computers
6. Mobile Phones
7. Desk Phones
8. Network Equipment (Switches, Firewalls, WAPs)
9. Servers
10. Data Storage

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This initiative includes the following activities:

1. Existing inventory models and quantity should be reviewed for accuracy and maintained in a centralized inventory management tool
2. Improve internal imaging and deployment process so the help desk team can prepare laptops for distribution without dependencies on other teams or vendors
3. Improve the current hardware disposal process for outdated equipment
    a. Potential to supplement library initiative to increase technology access through equipment disposal
4. Communicate expected timeframe for each type of equipment to be replaced by branch
    a. Staff at all locations should know months ahead of when an upgrade is planned for them
    b. Explain the procedure for an off cycle upgrade
5. Current / Upcoming Upgrades:
    a. **Staff and Patron Desktop Computers** – There are less then 30 remaining staff computers to be upgraded as a part of the most recent refresh which was paired with upgrading all Windows computers to Windows 10. All patron desktop computer upgrades have been completed.
    b. **Patron Laptops** - Five branches remain in current cycle for patron laptop refreshes
    c. **Catalog Computers** – All in One computers have been acquired and will be deployed throughout the library system
    d. **Network Switches** – Current Catalyst 3650 switches will be upgraded to the Catalyst 9300 Series switches within the next year.
        i. These switches are designed for full fabric control with Cisco DNA and Software-Defined Access (SD-Access), these switches deliver stellar performance and functionality and extend Cisco's networking leadership with significant innovations in security, mobility, the Internet of Things (IoT), and cloud.
        ii. Along with upgrading the switches, the UPS in each network closet will be upgraded as well.
        iii. Note: Firewalls replaced 2 years ago, next upgrade will be in 3-4 years
    e. **Mobile Devices** – Existing staff cell phones being used will be reviewed and offered upgrades for those with equipment older than 2 years.

Key Department Involvement: Budget Office, Accounting

Estimated Cost: *$300,000 Annually + E-Rate Funding Support for related equipment*

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IMPROVE DATA CENTER INFRASTRUCTURE

There are a number of infrastructure improvement projects that are underway to improve the resiliency of our data center.

1. Migration to Hyper Converged Infrastructure
2. Upgrading existing Data Center power backup (UPS)
3. Implementing Network Security Virtualization Platform (VMWare NSX)
4. Improving Phone System Resiliency – SIP lines
5. Migrate Digital Repository File Storage to the Cloud
    a. The BPL digital repository infrastructure will be migrated to the cloud to expand the system's capabilities and further support the library's need for an enterprise-level digital asset management system that allows content to be securely stored and broadly shared.
    b. Migrating file storage architecture to cloud-based services to provide scalable storage for maintaining an exponentially growing collection of assets
    c. This phase is more urgent since the library's on-premises storage capacity is limited, and is based on hardware that is at end-of-life for support
    d. Subsequent phase will involve the migration of the application

This initiative includes the following activities:

1. Implement modern storage array on premise
    a. Decommission the VNX Arrays once the Digital Repository migration is complete
    b. Migrate remaining file storage to new storage array
2. Complete Cloud Backup Strategy
    a. Decommission tape backup and offsite storage processes
3. Migrating Repository Services virtual machines to cloud-based services
    a. Allow applications to be more responsive to growing usage.
    b. This phase will occur more slowly, as each application or component of the repository's ecosystem is moved from in-house managed virtual machines to containerized cloud-based services that can be spun up or expanded according to real-time demand.
4. Identify other services that should be moved to be cloud hosted
    a. Services leveraged heavily off network or require high availability / scalability (Ex: Polaris Authentication)
5. Expand existing services through cloud migration with appropriate safeguards in place (Ex: MS Exchange from Hybrid to Full Cloud)
6. Expand monitoring to include cloud infrastructure

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      a. Improve incident response procedures (Potentially implement Pager duty)
7. Data Center Arrangement and Enclosure
      a. Improve the structure of the existing data center to fit to the needs of the existing equipment and consider other improvements to make (Add fire suppression system, upgrade existing Air Conditioning units, partition off space, etc.)

The DevOps Engineer position will be a key role in the cloud migration portion of this initiative.

Key Department Involvement: Digital Repository Services

Estimated Cost: *$30,000 Upfront + Cost Shifting*

INCREASE INFORMATION SECURITY MEASURES

Continue to invest in information security efforts related to staff awareness and education, risk assessment and management, and operations.

This initiative includes the following activities:

1. Continue annual security audits
      a. Active Directory, Firewall Rules, etc.
2. Annual penetration testing strategy established
      a. External tests done annually, etc.
      b. Internal tests done bi-annually
3. Annual end user training on phishing attacks
      a. Integrate with new hire procedures
      b. Routine phishing attack simulations
4. Monitor exploits and apply system updates for high risks within 48 hours of notification from MS-ISAC
5. Establish data access and protection strategy
      a. Review appropriate procedures for staff handling Personally Identifiable Information (PII)
      b. Review permission settings for internal and external sharing

Key Department Involvement: Web Services, Repository Services

Estimated Cost: *$10,000 Annually*

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PROFESSIONAL DEVELOPMENT FOR IT STAFF

Because of the increasing pace of technological change, the IT department will be required to make more changes over time, and likely at a faster rate than any other part of the BPL organization. IT staff should improve their ability to manage and deliver projects and programs through excellent communication, organization, and applying industry best practices for business process improvement.

This initiative will support the rollout of other initiatives while maintaining a high quality of operational success.

This initiative includes the following activities:

1. Develop training plan for every IT staff and tie to performance improvement goals when necessary
    a. From technical skill development to communication and program management
    b. Designate additional funding for staff development as needed to support each training plan
2. Encourage sharing of learnings among staff and establish environment for group-based learning rather than professional development in isolation
    a. Example: Training program together, sharing via Teams, etc.
3. Continue to foster an environment that focuses on results and provides ways for staff to commit to continuous improvement and accountability to it
    a. Celebrating strengths and accomplishments while being open to feedback
    b. Support teamwork, utilizing each person's strengths, willingness to let others help find solutions
    c. Encourage improvement suggestions to come from anyone
    d. Perform post-mortems when problems arise, to determine how to improve service level and outcomes in the future

Key Department Involvement: Training

Estimated Cost: *$12,000 Annually*

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SECTION III – STAFFING

There are some key positions that are important to the execution of this plan that either don't exist or are not yet filled. Some roles are not funded by the city of Boston. Those roles may be more temporary and funds for those roles will be raised in cooperation with the Boston Public Library Fund and the State Board of Library Commissioners – designated with an asterisk. Due to the priority of some of these positions, an engagement with a contractor may be prioritized if the role is unlikely to be filled timely.

1. Technical Product Owner (BLA 9T)
2. Data Analyst (BLA 9)
3. DevOps Engineer (P5) *
4. Technology Trainer

TECHNICAL PRODUCT OWNER (BLA 9T)

Millions of people interact with the Boston Public Library digitally each year to do everything from checking out a book to printing a resume to learning a new skill. Meanwhile, technology enables over 450 internal staff members across 27 locations to be effective in their roles. We believe these experiences should be streamlined, easy to use and delightful. To achieve that goal, the Technical Product Owner will work closely with the CTO and the technology team to design and manage the transformation of existing technology resources, services and processes. This role is an opportunity to directly affect and positively impact library staff and patrons of various backgrounds throughout Boston.

We're looking for a Technical Product Owner who embraces the opportunity and nature of working in civic technology. The technology team is in charge of defining and implementing an ambitious roadmap for our internal and public facing products. The Technical Product Owner will empathetically collaborate with various departments who have varying degrees of technical knowledge. They will be able to apply design thinking methodology and focus on end user experience through active listening and attention to user concerns as they shift between managing various projects to improve the services we provide. The Technical Product Owner works closely with other members of the Technology Team (server, network, applications, help desk, A/V, and tech central) to prioritize features, prototypes, and drive forward the roadmap for each product and process.

DATA ANALYST (BLA 9)

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Under the direction of the President's Office or designee, works collaboratively with diverse staff to acquire, organize, validate, interpret, report on, and obtain actionable insights from large data sets. Advises and assists in the development of performance metrics for programs, services, projects, and initiatives. Responsible for developing, documenting, disseminating, analyzing, and maintaining statistical reports.

DEVOPS ENGINEER (P5) *

This position supports the BPL Digital Repository – a digital asset management system used by Massachusetts libraries, archives, historical societies, and museums – by provisioning and deploying technical infrastructure to support administrative and public-facing applications for managing and disseminating digitized cultural heritage materials. This position will be responsible for implementing continuous integration software, tools, and workflows for application deployment, monitoring hardware resource utilization and security, and creating and maintaining internal documentation.

The successful candidate will collaborate with the Repository Services team to develop and integrate creative new practices and ideas, using open-source software to facilitate an enterprise-level content delivery system to fulfill the information needs of scholars, students, and the public.

TECHNOLOGY TRAINER

As technology frequently changes, it is important that staff continue to be technology proficient. Some jobs require less technical proficiency and may be held to different standards, but there is baseline proficiency that is currently not being met.

There is a job description being worked on for this role that is in progress. This individual would be responsible for staff training and could also provide training for the public.

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`SECTION IV – FINANCIALS

The financial objective is to maximize the value of taxpayers' money by making the most cost-effective choices regarding all expenditures and by leveraging City dollars to raise as much money as possible from private, state and federal resources.

There are a number of funding sources that can be leveraged for Technology. The goal will be for these various initiatives to be funded with the source that is most suitable for the type of project that it is while also considering the ongoing maintenance of the outcome of the initiative.

The following initiatives need the largest financial investment and the target funding source is specified for each. These costs are estimated and subject to change as the details of each initiative are determined.

Initiative	Estimated Upfront Cost	Estimated Annual Recurring Cost	Target Funding Source
Technology Refresh Timeframes	$ -	$ 300,000	Lease Purchase / E-Rate Program / MBLN
Increase Technology Access (Hotspots, Wi-Fi, Chromebooks)	$ -	$ 117,450	City Operating / Lease Purchase
Refine Business Continuity Plan	$ -	$ 25,000	Cost Shifting / City Operating
Improve Digital Signage	$ 200,000	$ 20,000	Capital Project
Enable Meeting Rooms for Videoconferencing	$ 75,000	$ 15,000	BPL's Unrestricted Funds
Floating Programming Tech Kits	$ -	$ 15,000	MBLN / BPL Fund?
Implement Reliable Data Analytics Platform	$ 10,000	$ 12,000	BPL's Unrestricted Funds
Professional Development	$ -	$ 12,000	BPL's Unrestricted Funds (Travel & Training)
Streamline Data Collection	$ 50,000	$ 10,000	BPL's Unrestricted Funds
Increase Information Security	$ -	$ 10,000	City Operating
Expand Advanced Technology Lending		$ 10,000	BPL Fund?
Activate Outdoor Spaces	$ 40,000	$ 5,000	BPL Fund?

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These are the primary funding sources for technology:

1. **City Operating**

   The majority of city funding is used to cover employee salaries. There is also a portion that is used for more ongoing operational expenditures rather than new projects or initiatives. It is important that these funds are considered in the longevity of initiatives to make sure there is funding ongoing for the outcome of a new initiative. These funds are most commonly used for the purchase of computer equipment and the renewal of major licenses such as Microsoft and Adobe licenses. These funds typically account for roughly $500,000 of the IT department's budget each year.

   a. **Lease Purchase**

      Lease purchase funds are a part of the city operating funds that is tied to the city getting a loan and requires early requests for the purchases. Requests are grouped with the purchase requests from other city departments to leverage discounted pricing from a bulk order and used as loan collateral. Requests are generally made in August, but purchase orders aren't approved until November and equipment received in December.

      These funds are most commonly used for purchasing laptops, desktop computers, and monitors. It amounts to about $300,000 each year.

2. **Federal E-Rate Program: Universal Service Program for Schools and Libraries**

   The FCC's E-Rate program makes telecommunications and information services more affordable for schools and libraries. With funding from the Universal Service Fund, E-Rate provides discounts for telecommunications, Internet access, and internal connections to eligible schools and libraries.

   These funds are most commonly used by IT for internet service, fiber connections between locations, network hardware upgrades (WAPs, switches, firewalls, etc.). The discount amount that they cover is 85% or 90% of the total cost and generally amounts to over $650,000 each year.

3. **Boston Public Library's Unrestricted Funds**

   The library generally uses unrestricted funds for projects or initiatives rather than an ongoing annual expense. These funds are comprised of trust funds, state aid and enterprise revenue. There is currently a balance of roughly $2M that is set aside for technology improvement projects.

4. **Capital Project**

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The capital project funds are typically used for major renovations and includes the technology purchases associated with that project. If there is a need for a major IT project, there is the potential for IT to ask to use capital project funds.

5. **Boston Public Library Fund**

The Boston Public Library Fund's fundraising efforts for special projects has supported a number of technology initiatives to date, including expanding the Wi-Fi lending program and installing external wireless access points at branches with low internet adoption rates.

6. **Library for the Commonwealth Program (LFC) - State Funding**

The Library for the Commonwealth Program includes funds received from the State. The funds are in statute, so we don't need to apply for grants like with MBLN. However, it still comes to BPL via the Board of Commissioners who approves our budget and Plan of Service which is submitted annually in November for the upcoming fiscal year.

These funds are required to be used to support Massachusetts libraries and library users throughout the state. Recently, the service plan details out services in four key areas: Digital Commonwealth & Digitization Services; Statewide Reference & Research; Education & Civic Engagement; and Statewide Collection Development & Access. Technology related costs include IT equipment, software licenses, and a portion of salaries for specific roles (usually a limitation of only up to 50% of the salary).

7. **Metro Boston Library Network (MBLN)**

The MBLN is a collection of libraries in the metro Boston area - Chelsea, Malden, Boston Public School Libraries, Fisher College, Newman School. The MBLN applies for grants from the State via the state agency, the Mass. Board of Commissioners.

Boston Public Library staff implements projects on behalf of the MBLN. Their funds are used to cover shared expenses that all member libraries benefit from, and many of them would not be able to afford on their own. Technology related costs include our circulation system's licensing (Polaris) and the application manager's salary.

There is $114,129 in accumulated Network Infrastructure funds that could be used for special network infrastructure projects that benefit all members.

SECTION V – IMPLEMENTATION

These initiatives expect to be completed within the next three to five years. The goals and initiatives have been detailed out inside of Microsoft Planner for visibility and accountability. All staff will be able view progress and get updates on the execution of initiatives and activities by visiting the Technology Plan board.

The progress of these initiatives will be continually reported on within Microsoft planner tasks and updated weekly. A number of initiatives are already in-progress.

Technology Plan Board: https://tasks.office.com/bpl.org/en-US/Home/Planner/#/plantaskboard?groupId=f4eeed40-8ce6-47ee-a7dd-ca6ae27f6494&planId=6Thivd-jQkym59pJuhZFYmUADb9f

There is the chance that mid-course corrections to the plan will be made in response to feedback, new developments and opportunities as they arise. Additional initiatives may be determined but the implementation may extend beyond the three to five year timeframe.

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APPENDIX A – STRATEGIC GUIDANCE

In creating this plan, it was important to align with the priorities of the broader library and understand how IT can support those priorities.

Mission Statement

"Free to All" is the generative Mission Statement, plus additional McKim Building inscriptions (1851, 1895)

Compass Principles (2012)

1. User Centered
2. Community Gathering
3. Special Collections (& Collections of Distinction)
4. Children & Teens
5. Center of Knowledge
6. Access & Innovation
7. Sustainable
8. Fun

Operating Vision Statement (2016)

"Boston Public Library provides educational and cultural enrichment free to all for the residents of Boston, Massachusetts and beyond, through its collections, services, programs, and spaces."

Pillars of Public Library services (2016)

1. Reading & Literacy
2. Programming & Spaces
3. Special Collections & Cultural History
4. Reference & Instruction

Organization Cultural Principles (2017, 2019)

1. Execution, Efficiency, Accountability, Innovation
2. Customer Service Oriented.
3. Principles of Diversity Equity & Inclusion
4. Recognition of modern society as technologically-enabled and connected and the role of technology as platform, infrastructure and content, across all that we do.

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Funding priorities (2018, 2019)

1. Programming & Outreach
2. Collections Support
3. Innovation & Technology
4. McKim 2020 Project

Institutional Priorities (2019)

1. Raise and enhance the Library's public profile; facilitate sustainable growth of public and private funding streams and, collaborate deeply with the Fund for the Boston Public Library.

2. Execute systemwide improvements to buildings, spaces and infrastructure primarily focused on the robust Capital Plan and supporting operational initiatives.

3. Enhance collection management, intellectual control, acquisitions, access and discoverability, supporting community reference & research needs.

4. Enhance the Library Services organization systemwide with programming & outreach and with special emphasis on the elevation of youth services, while continuing to be responsive to the community's borrowing and information needs.

5. Develop and implement a digital, technological and innovation plan in support of collections, services, access, and infrastructure systems and initiatives.

6. Develop a series of efforts and initiatives to improve and enhance the staff and organizational culture, while ensuring all staff functions remains connected to the Library's mission with a focus on staff support and engagement, productivity as well as enhanced user impact and customer service.

7. Expect, plan for and address the unexpected.

ORGANIZATIONAL PRIORITIES

The Boston Public Library has adopted seven priorities to focus on from 2020 – 2030, which are factored into the programs and initiatives within this Technology Plan.

1. **Diversity, Equity, & Inclusion** - We will do everything in our power to become an organization that recognizes our challenges and fulfills our obligations to staff and patrons alike with respect to diversity, equity, and inclusion. We commit to following all actions outlined in the BPL Statement on Racial Equity.

2. **Workforce Development, Civic Engagement, & Public Health** - We will continue providing opportunities, programs, and services for all patrons, but we will add and maintain a special focus on the challenges and inequities faced by people of color, immigrants, and other underserved communities.   We will specifically focus on the areas of workforce preparedness and development, civic engagement, and public health. We will continue to foster the love of reading in children from birth to 18; and to engage youth in education, culture, civics, STEAM, and social and emotional learning.

3. **Diverse & Inclusive Collection** - We will maintain and build collections that are diverse, inclusive and geared to understand and close equity gaps, that anticipate users' interests and needs, and will practice responsible stewardship of all our collections.

4. **Expand Reputation** - We will raise awareness on the local and national level of our value as a preeminent urban public library and research institution. Through promoting our collections, programs, and services, and telling the story of their impact, we will also support efforts to increase private funding that will help secure and sustain our future ability to play a role in patrons' lives.

5. **Physical Space Engagement** - We will provide welcoming spaces for patrons and staff that are safe, clean, and sustainable, while incorporating the latest and most appropriate technologies and strategies to do so.

6. **Technology Plan** - We will develop and implement an innovative technology plan that will support our programs and services, enable the Library's operations to run seamlessly, and help eliminate the digital equity gap. We will deliver a range of accessible online offerings and digital collections, balancing preservation of our collections with increased accessibility and user engagement.

7. **Disaster Preparedness** - We will expect -- and plan for -- the unexpected, so that our library can continue to operate with minimal disruptions to patrons, even when we face operational or communications challenges.

APPENDIX B – TEAM RESPONSIBILITIES

This appendix provides an overview of each technology team within IT and is intended to increase understanding of how the IT department is organized. This organizational chart lays out the structure of the IT department and how each team is currently led. Following the organizational chart, are the areas of responsibility / services provided by the IT department and related technology teams in support of other functions throughout the library system.
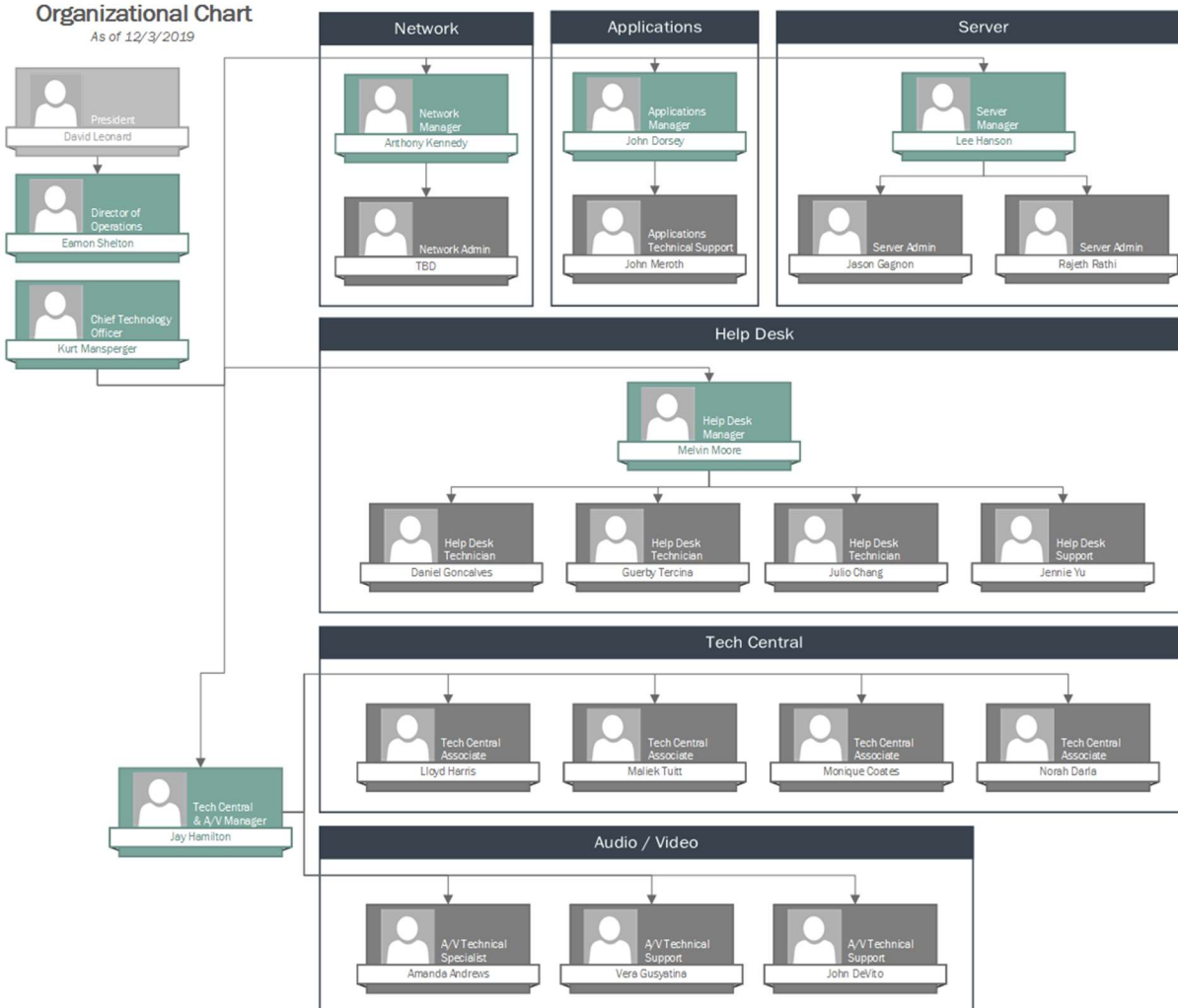
APPLICATION TEAM

The application team is responsible for configuration of a selection of public and staff facing applications, which includes maintaining relationships with vendors and ensuring there is no loss in service. Additionally, the application team provides data analytics/reporting services to the organization and oversees management of the hotspot lending program. The areas of ownership can be categorized into the following:

- Applications
  - **Polaris** - Circulation, Bibliographic Function, Patron Record
    - Includes circulation for MBLN - Chelsea, Malden, Boston Public Schools, Fisher College, Newman
  - **Tixkeeper** - Tickets for Museums
  - **Pharos** - Public Computer Session Management, Public Print Management, Patron Money Management, Payment Kiosks
  - **CaiaSoft** - High Density Storage (Archive Center)
  - **ComCat** - Statewide Circulation Catalog System
  - **Atlas Systems – Archive Space** – Coming soon for finding aid management, replacing Archon
  - **Atlas Systems - Iliad** - Inter-library Worldwide Loans
  - **Atlas Systems - Aeon** - Coming Soon for Special Collections
- Public Printer and Self Service Kiosks
  - Configuration and troubleshooting
- Self Checkout Machines & Security Gates
  - Management, repair, troubleshooting
- People Counters
- Data Analytics
  - Collection of data from staff
  - Reports provided to staff
  - Developing new reports
- Technology Lending
  - Hotspot Device and Plan Management

AUDIO/VISUAL TEAM

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The A/V team is responsible for ensuring all programs and meetings have the appropriate audio and video equipment and support needed to run successfully. The team also oversees digital displays and digital interactives throughout the system. Those areas of ownership can be categorized into the following:

- Audio/Video Equipment
  - Procurement and management of equipment at Central and branches
  - Setup of necessary A/V equipment in meeting spaces, event spaces, community rooms, teen gaming rooms, and throughout the library as needed
  - Management of virtual meeting licenses and staff support
  - Software and A/V hardware support for streaming live events
- Digital Displays / Interactives
  - Maintenance of infrastructure
  - Configuration of content as provided by other departments

HELP DESK TEAM

The help desk team is responsible for supporting all staff and public computers so that they can work effectively and provide high quality customer service. Those areas of ownership can be categorized into the following:

- Technical support to all staff (Central and Branches)
  - Technology Support Hotline
  - First layer of assistance, escalates to other teams as needed
  - Remote and in-person assistance
- Computer and peripheral hardware provisioning and maintenance for public and staff in central and branches
- Printer hardware procurement, deployment, and toner management
- Computer application installation and support

NETWORK TEAM

The network team is responsible for all network infrastructure and phone management. Those areas of ownership can be categorized into the following:

- Network - BPL and MBLN (Chelsea and Malden)

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- ○ Ensuring reliable and performant network infrastructure
- ○ Wi-Fi / Wireless Access Point management
- ○ Troubleshoot network issues
- Phones
  - ○ Installation and configuration of desk phones
  - ○ Acquisition and management of cell phones
  - ○ Virtual phones

SERVER TEAM

The server team is responsible for internal infrastructure which hosts applications that support library staff and the public. They are also responsible for the technical configuration of certain core applications. Those areas of ownership can be categorized into the following:

- Server Management
  - ○ Installation and configuration of servers
  - ○ Configuration of virtual environments
  - ○ Performance tracking and tuning
  - ○ Reliable backups
- Application Support
  - ○ Ensuring reliable and performant servers
  - ○ Supporting installation/upgrade of Applications
- Staff Access and Collaboration / Operations Support
  - ○ User management / Active Directory / MFA
  - ○ Email / MS Exchange
  - ○ Microsoft 365 & Teams
  - ○ SharePoint, OneDrive, Shared network drives
  - ○ Security
- Computers
  - ○ Centralized management of devices (Group Policy)
  - ○ Profile management of public computers
- Limited Application Configuration for Select Applications
  - ○ LibCal
  - ○ SysAid

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      ○   EMS - Event Management System

TECH CENTRAL TEAM

The tech central team is responsible for providing a positive experience for patrons that are looking to use public computers or print services in the tech central space. Staff also provide support to other teams as needed for minor technical support tasks. Those areas of ownership can be categorized into the following:

- Management of Tech Central
    - Basic computer support
    - Printing, Copying, Scanning, etc
    - Basic personal device guidance
    - Including management of accessibility equipment
- Technical Support Backup
    - Event setup / take down
    - Help desk backup
    - Supporting public technology programming
- Improved Customer Services

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APPENDIX C – TECHNOLOGY TEAMS OUTSIDE OF IT DEPARTMENT

This appendix provides an overview of key teams outside of the IT department that have a large dependency on the IT department to support the success of their work. Additionally, these departments can often be presumed to be a part of IT. The experience that public and staff have when interacting with these departments can have a lasting impact on the opinion of technology within the library.

WEB SERVICES TEAM

The web services team largely focuses on patron facing applications and relies on the IT department for support with any issues which could be occurring due to network, security or DNS configuration.

Those areas of ownership can be categorized into the application configuration and support of the following applications:

- **BiblioCommons** - Online Catalog, Mobile Apps, Website CMS, Event Mgt
- **Survey Gizmo** - Data Intake / Customer Feedback
- **eCard registration form -** eCard processing, minor apps, files, sites
- **Online Resources/Subscription Databases** - 100+ - Proquest, Gale, Lynda, Ebsco, Online High School, Niche Academy, etc.
- **LibApps**
  - **LibAnswers** - Patron communication from reference and research services
  - **LibGuides**
  - **LibCal** (Server Team / Catherine)
  - etc
- **Drupal CMS** - Staff Intranet
- **Streaming and Downloading Collections**
  - **Overdrive** - Borrow e-books, digital audio books
  - **RB Digital** - Borrow digital audio books
  - **Hoopla** - Borrow e-books and video
  - **Kanopy** - Stream video
- **EZ Proxy** - Remote patron authentication & web proxy
- **Microsites**
  - apps.bpl.org
  - Digital file storage (files.bpl.org)

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> o MBLN Wordpress site
> o Statewide digitization blog (Wordpress) - instructions for other libraries

REPOSITORY SERVICES TEAM

The Digital Repository serves as the primary digital asset management system for digitized special collections, and the object store for front-end applications which disseminate this content online, such as Digital Commonwealth and the Leventhal Map & Education Center's Digital Collections.

As of December 2020, this system provides access to over 40 TB of content from both BPL and over 200 libraries, archives, historical societies, and museums from across Massachusetts. It also serves as a content hub for the Digital Public Library of America, which aggregates these materials into a national digital library, thereby increasing their reach and impact.

The Repository Services team is responsible for the development, deployment and management of the Digital Repository by provisioning and deploying technical infrastructure to support administrative and public-facing applications for managing and disseminating digitized cultural heritage materials.

In order to expand the system's capabilities and further support the library's need for an enterprise-level digital asset management system that allows content to be securely stored and widely shared, IT supports the Repository Services team in their initiatives to increase capacity, efficiency, and impact including:

- Migrating file storage architecture to cloud-based services to provide scalable storage for maintaining an exponentially-growing collection of assets.
- Migrating virtual machines to cloud-based services to allow applications to be more responsive to growing demand.
- Contributing code to open-source software projects and increase community involvement in application development
- Enhancing integration of digital repository content into other parts of the library's collections and services, including the library catalogs, digital signage, social media, communications, and educational programming.

SECURITY TEAM

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The security team is responsible for security within all of our buildings, including staff and patrons. The security camera infrastructure is housed alongside IT equipment. While the IT staff does not directly manage or maintain any security systems, they are available to support and troubleshoot any installs or issues that arise, especially those related to shared technology infrastructure.

TRAINING TEAM

The training team is essential to the success of rolling out new technology or processes. This team is currently limited to one person and would benefit from having additional capacity to support technology initiatives. Most importantly, the initiative regarding staff technical training is essential to the ongoing success of technology initiatives.

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