



MEMORANDUM

TO: Laura Lent, Chief of Collections and Technical Services, San Francisco Public Library

FROM: Sarah Swanbeck, Sherman Luk, City Services Auditor Division

DATE: December 5, 2012

SUBJECT: Collection and Technical Services Efficiency Review

EXECUTIVE SUMMARY

The Library has experienced continuous increases in circulation, usage of digital collections, and other service demands over the past few years. The Library is looking for new ways of doing business to maintain high levels of customer service amidst stable staffing levels and increasing public demand for books and materials. Focusing on the service areas of Acquisitions, Receiving, Cataloging, Processing, and Preservation, the Controller's Office team conducted a broad assessment of the Collection and Technical Services Division and identified potential inefficiencies in the department's current workflow, including unnecessary movement of materials throughout the Department, fluctuations in the ordering of materials, a time-consuming system for processing purchase orders and invoices, and the underuse of the Library's data management system. Based on these findings, the Controller's Office recommends the following actions:

1. Move items more quickly throughout the department by loading only the top two shelves of the book cart.
2. Reorganize portions of the workspace to allow for an open, assembly-line type layout.
3. Set spending targets to more evenly smooth spending throughout the year.
4. Cross-train staff in basic processing functions.
5. Increase the number of pre-processed items.
6. Convert the Division's paper invoicing process to an electronic invoicing process.
7. Use the Millennium database to track and maintain performance standards and manage operations.
8. Use the Millennium database to develop regular benchmarking reports for management

BACKGROUND

The Library's Collection and Technical Services Division is responsible for selection, acquisition, cataloging, processing and distribution of new print, audiovisual, and electronic materials and preservation of older materials. Division activities are centralized at the 9th Street location and support

the whole library system including the Main Library, all branch libraries, bookmobiles, and all e-Resources - resources that can be accessed through the Library's website remotely as well as at a library location.

The Division is made up of two departments with separate managers and functions:

- 1) The Technical Services subdivision includes the Acquisitions, Receiving, Processing and Preservation units. Acquisitions is responsible for ordering books, audiovisual materials and periodicals, licensing and implementing e-Resources, approving invoices and tracking new materials purchases for all library locations. Receiving receives and invoices materials and sorts them for internal and external distribution. Processing prepares materials for circulation and bins them for distribution. The Preservation unit is responsible for assessing and repairing damaged materials, restoring fragile archival materials, and coordinating bindery work.
- 2) The Collections and Cataloging subdivision includes the Collections unit, which selects books, audiovisual media, periodicals and e-Resources for purchase, and manages gifts of materials. The Cataloging unit downloads, creates and/or makes corrections to bibliographic and item records for new materials and gifts.

PROJECT CONTEXT AND SCOPE

The Library has seen a 23 percent increase in circulation of books since 2007 and a 42 percent increase in non-book materials circulation (audiovisual, digital collections) since 2007. The City has not been able to increase the department's staffing. The Library is therefore looking for new ways of doing business to maintain high levels of customer service amidst stagnant resources but increasing workload.

The goal of this analysis is to provide a broad assessment of the Collection and Technical Services Division, specifically focusing on the organization of the division, the services provided, the work load of the division's staff, and the different processes involved with each unit. The assessment addresses inefficiencies in the department's current workflow in the service areas of Acquisitions, Receiving, Cataloging, Processing, and Preservation. The Controller's Office determined that improvements could be implemented to make the division's processes more integrated, flexible and efficient.

METHODOLOGY

The Controller's Office staff reviewed background information provided by the library, including reports, organization charts, staffing allocations, job descriptions, service and output statistics, as well as past process maps and process analyses. To better understand key functional areas and how they operate, the Controller's Office team conducted stakeholder interviews with key staff in each of the divisions (For interview questions, see Appendix B). The Controller's Office also spent a day on-site to tour the Collection and Technical Services division and to follow the full process from the time a new item is received on the loading dock to the time a fully processed item is ready to be sent out to the Main Library or one of the branches. Controller's Office staff also met with and interviewed staff with the Library's Finance department in order to more fully understand the Department's procurement and invoicing process and how Collection and Technical Services staff interact with the Finance Department. Finally, Controller's Office staff reached out to representatives from other Libraries that had recently undertaken an efficiency review of their technical services, including Fresno, San Jose, Boston, and New

York. Through interviews with staff at these other libraries as well as by reviewing final reports about the outcomes from each of these libraries' technical services reviews, Controller's Office staff gained greater insight into how other libraries have sought to improve efficiency.

Using the information gained through background documents, stakeholder interviews, and in-person observation, Controller's Office staff mapped out the Division's entire workflow process. The result of this process mapping was a high level map of all the units and their interaction with one another within the Collection and Technical Services division; a map detailing the purchase order and invoicing process with the Finance department; a map of the periodicals Processing unit; and a map of the process for approving and renewing e-Resources (See Appendix A).

FINDINGS AND RECOMMENDATIONS

A. MOVEMENT OF MATERIALS THROUGHOUT THE COLLECTION AND TECHNICAL SERVICES DIVISION IS NOT ALWAYS TRANSPARENT AND CAN RESULT IN DELAYS IN PROCESSING ITEMS.

Items move throughout the building primarily on carts. Library staff in Receiving, Cataloging, and Preservation units typically wait until a cart is full before moving it to the next stage of the process. Opportunities exist for Collection and Technical Services staff to make the physical movement of materials throughout the building more efficient.

Recommendation 1: Load only the top two shelves on each book cart in order to move items more quickly throughout the department.

Because staff wait until a cart is full before moving it to the next stage of the process, delays can occur while staff wait for a single cart to fill up. By instituting a division-wide policy that staff move carts to the next unit after the top two shelved have been filled, carts will move more quickly throughout the building and there will be fewer backlogs within units.

Recommendation 2: Reorganize portions of the workspace to allow for an open, assembly-line type layout.

Library staff should consider a realignment of the workspace layout to make parts of the process more transparent and to cut down on internal movement of materials. In particular, in the Processing unit, Library staff primarily work from their own desks and from their own carts. Because many parts of item Processing involve tasks that might benefit from an open layout – stamping with the San Francisco Public Library seal and applying labels to multiple items – the Library could consider reorganizing the workspace within the Processing unit to allow for an open, U-shaped assembly-line layout. Working within the Department's space constraints, as well as the constraint of needing to operate on several floors, the Collection and Technical Services division should consider organizing its workflow in a U-shape without any twists and turns and without any staging areas where items may accumulate.¹ The open layout could be used in conjunction with the current individual cube set-up, allowing Library staff to efficiently complete steps like label application and stamping in an open environment, while keeping ownership over their own space and materials at their own desk.

¹ John J. Huber, *Lean Library Management* (2011).

B. FLUCTUATIONS IN THE ORDERING OF MATERIALS LEAD TO TIME DELAYS IN CATALOGING AND PROCESSING, WHICH RESULT IN A SERVICE DELAY FOR ITEMS TO REACH THE PUBLIC.

The Collection and Technical Services division often sees backlogs in item processing due to fluctuations in the ordering of materials. Because Library staff must respond constantly to publishing trends during each year and cannot always anticipate when replacement materials will be needed, ordering can occur sporadically and is often concentrated toward the end of the fiscal year, when it is necessary to spend down the remaining balances on any purchase orders.

Recommendation 3: Set quarterly spending targets to more evenly smooth spending throughout the year.

Additionally, improve oversight of spending so that ordering is reasonably constant throughout the year. By smoothing spending, this will cut down on the number of backlogs, particularly in the Processing unit, and ensure that materials are processed and shipped as quickly as possible.

Recommendation 4: Cross-train staff in basic processing functions.

Common functions are siloed by unit and there is limited cross-unit support. While supervisors have informally allowed staff to move across units to help out during extreme delays (for example, when the sprinkler system at the Chinatown branch malfunctioned and led to hundreds of items needing to be dried and cleaned), there is no institutional process in place to allow for this. Formally cross training staff will allow staff to be utilized more efficiently across units as delays occur. In particular, training staff in basic processing functions would be relatively straight-forward and address an area of the division where backlogs most often occur. Additionally, cross training would be a good avenue for professional development and would provide an opportunity to strengthen ties between units.

Recommendation 5: Increase the number of pre-processed and shelf-ready items.

Consider increasing the number of items already partially cataloged or processed to cut down on in-house handling and processing. While currently about 80 percent of the Library's items that arrive at Collection and Technical Services are pre-processed or shelf-ready, over time, the Division should look for ways to maximize the number of pre-processed items. Pre-processed items move through the workflow considerably faster than materials that need to be catalogued, reinforced or repackaged, and processed (See Appendix A, "Collection and Technical Services").

C. THE LIBRARY SYSTEM FOR PROCESSING PURCHASE ORDERS AND INVOICES IS PAPER-BASED, MANUAL, AND TIME CONSUMING.

The Division's current system for processing paper invoices is time consuming, with a single piece of paper changing hands numerous times and being copied several times. The average Processing time from the time an item is received to the time the item is marked "paid" in FAMIS averages about 30 days, with many types of materials (Juvenile Add Copy jPS, Juvenile New jPS) taking longer (See Table II). Internally, within the Collection and Technical Services Division, the invoice changes hands four

different times (See Appendix A, Process C). Within the Finance department, the invoice changes hands three different times (See Appendix A, Process A). Time spent moving the invoice between individuals is inefficient and creates more opportunities for the processing of the item, and the ultimate resolution of the payment in FAMIS to be delayed.

Recommendation 6: Convert the Department's paper invoicing process to an electronic invoicing process.

In the short-term, Library staff should consider choosing vendors with an electronic invoicing option. While Collection and Technical Services balance many trade-offs when selecting a vendor, to the extent possible, staff should look for ways to maximize the number of vendors using electronic invoicing. In the long-run, Library staff should move from an internal paper invoicing process to an electronic invoicing process. In the short-run, Library staff should use e-invoices at every opportunity when a vendor is able to supply them. Additionally, Library staff should work with the City in order to develop a process for using consolidated invoices, which would cut down on the number of individual invoices. This last recommendation would be contingent on the City agreeing to accept consolidated invoices.

D. THE MILLENNIUM DATABASE, THE LIBRARY'S DATA MANAGEMENT SYSTEM, IS NOT USED TO TRACK THE MOVEMENT OF MATERIALS ACROSS DIVISIONS.

The Collection and Technical Services division does not currently use the data captured in the Millennium Database to actively and centrally track the movement of materials between units. Without a system in place to benchmark progress of materials by unit, Library staff will be unable to identify and track important trends across units over time. Being able to identify a baseline for how quickly materials move through the process is a necessary first step in making long-term efficiency improvements.

While each unit interacts with the Millennium Database and marks off where the item currently is within the division, these records are not downloaded regularly or translated into raw data on processing times within the division. As part of our analysis, the Controller's Office team sampled an average of 20 items from each type of material that were processed by the Division between July 2011 and October 2011. Using this data, Controller's Office staff was able to estimate the length of time between key junctures of an item's processing (see Table I). The Controller's Office was able to identify some key patterns in the division's processing of items:

- On average, materials reach library shelves 125 days after their published "street date" (i.e. date issued by the publisher). However, Juvenile Audiovisual materials, Music Scores, and new Teen Fiction take over 100 days longer to reach shelves than the average item.
- Adult Audiovisual materials and Adult New Non-Fiction materials enter the Library's system (the item create date) much longer after the item's street date than other materials. On average, Adult Audiovisual materials enter the Library's system 30 days past when the average material type enters the Library's system and Adult New Non-Fiction enter the system more than 60 days past the average material.

TABLE I: PROCESSING TIMES (DAYS), BY TYPE OF MATERIAL

Highlighted cells indicate that the item has an above-average processing time.

LIST NAME	PO* Request --> PO Issue	Order --> Invoice	Invoice --> Receive	Receive --> Catalog	Catalog --> Item Create	Receive --> Item Create	Item Create --> Street Date
Adult, New Non-Fiction (Purchased w/ Grant)	34	24	37	7	23	30	-187
Adult, New Non-Fiction	13	41	16	-34	42	7	-76
Adult, New Large Print Non-Fiction	19	21	10	13	45	58	-126
Adult, New Large Print Fiction	21	30	11	-15	4	-11	-88
Adult, New Fiction	19	30	9	-12	7	-5	-27
Adult, New Fiction (Rush)	19	24	9	NA	NA	0	-34
Adult, Add Copy Fiction	19	25	11	NA	NA	0	NA
Adult, Audiobook	10	33	16	32	23	55	-51
Adult, Audiovisual	7	17	21	NA	NA	0	-154
Juvenile, New jPS	7	10	18	-13	0	-13	-86
Juvenile, Add Copy jPS	7	47	21	NA	NA	0	NA
Juvenile, New Non-Fiction	7	39	17	-8	0	-8	-80
Juvenile, Add Copy Non-Fiction	7	38	18	NA	NA	0	NA
Juvenile, Audiovisual	7	28	29	1	18	19	-235
Chinese Language, New Fiction	NA	4	58	16	4	20	NA
Music Scores	15	25	17	55	30	85	-243
Teen, New Fiction	7	31	19	-10	10	-1	-239
AVERAGE ALL MATERIALS	14	27	20	3	17	14	-125

*PO=Purchase Order

Recommendation 6: Use the Millennium database to track and maintain performance standards and manage operations.

Consider establishing a quota system for each stage of the process for different types of materials. By setting goals for different types of materials, Library staff will be able to more easily track their progress for processing materials. Simultaneously, the Division should consider updating its system for tracking items in Millennium. For example, the Division could use the system's existing capacity to send reminder "email ticklers" in order to remind staff when they are falling below their quota for items in a given month. The existing system could also be utilized to send monthly reminders about individual items that may have mistakenly fallen through the cracks and to create a sense of urgency among the staff. A quota system coupled with email reminders for each unit would help Library staff more quickly recognize delays within their unit and allow staff from other divisions to fill in and help out.

Recommendation 7: Use the Millennium Database to develop regular benchmarking reports for management.

The patterns in Table I highlight some initial areas that may warrant closer attention by Library staff. However, because the Library has not conducted this type of benchmarking previously, the significance of these patterns is unknown. There may be a reasonable explanation as to why

some types of materials typically take longer at certain stages of the process than others. This type of benchmarking tool, therefore, will only be valuable if Library staff conduct data analysis annually or biannually to identify important trends in processing times.

TABLE II: PROCESSING TIME (DAYS) FROM DATE MATERIAL IS RECEIVED TO DATE ITEM IS MARKED “PAID” IN FAMIS

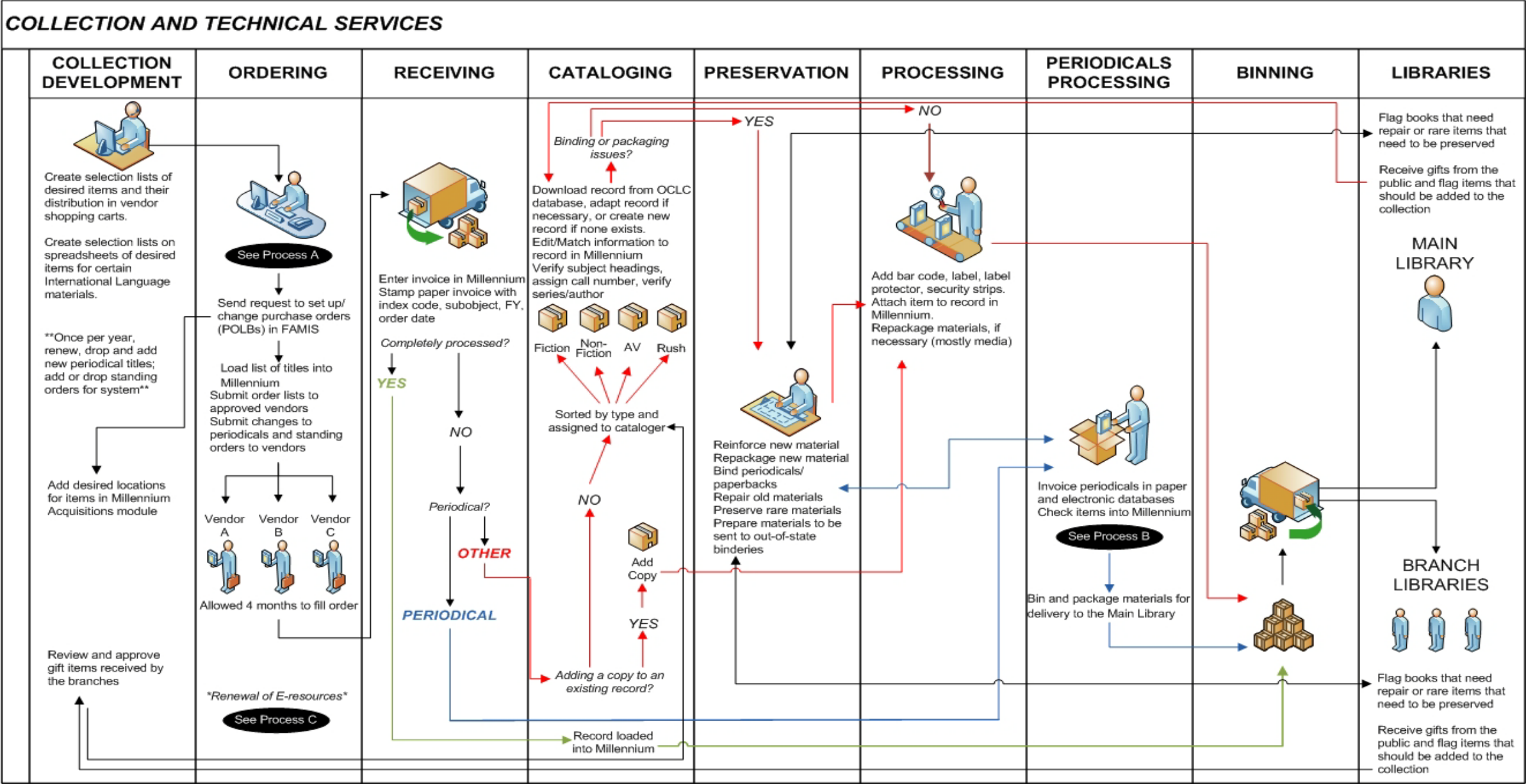
LIST NAME	Receive Date--> FAMIS Paid Date
Adult, New Non-Fiction (Purchased w/ Grant)	7
Adult, New Non-Fiction	35
Adult, New Large Print Fiction	54
Adult, New Fiction	52
Adult, New Fiction (Rush)	16
Adult, Add Copy Fiction	36
Adult, Audiovisual	33
Juvenile, New jPS	61
Juvenile, Add Copy jPS	70
Juvenile, New Non-Fiction	54
Juvenile, Add Copy Non-Fiction	45
Juvenile, Audiovisual	31
Chinese Language, New Fiction	22
Teen, New Fiction	43
AVERAGE ALL MATERIALS	29

NEXT STEPS

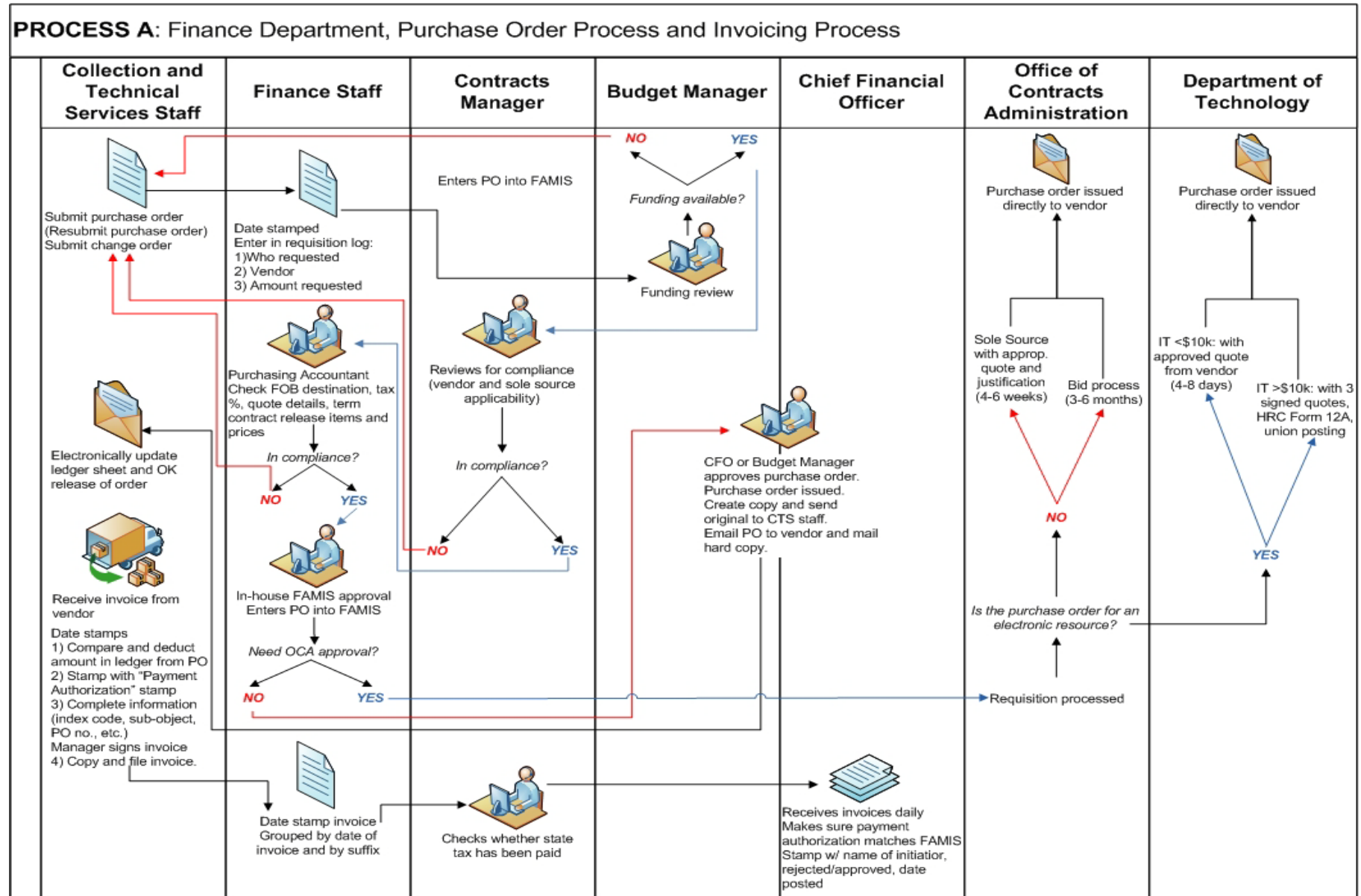
The Library should consider the feasibility, prioritize, and develop implementation plans for the following recommendations:

- Reorganize portions of the workspace to allow for an open, assembly-line type layout.
- Set spending targets to more evenly smooth spending throughout the year.
- Cross-train staff in basic processing functions.
- Increase the number of pre-processed items.
- Covert the Division’s paper invoicing process to an electronic invoicing process.
- Use the Millennium database to track and maintain performance standards and manage operations.
- Use the Millennium database to develop regular benchmarking reports for management.

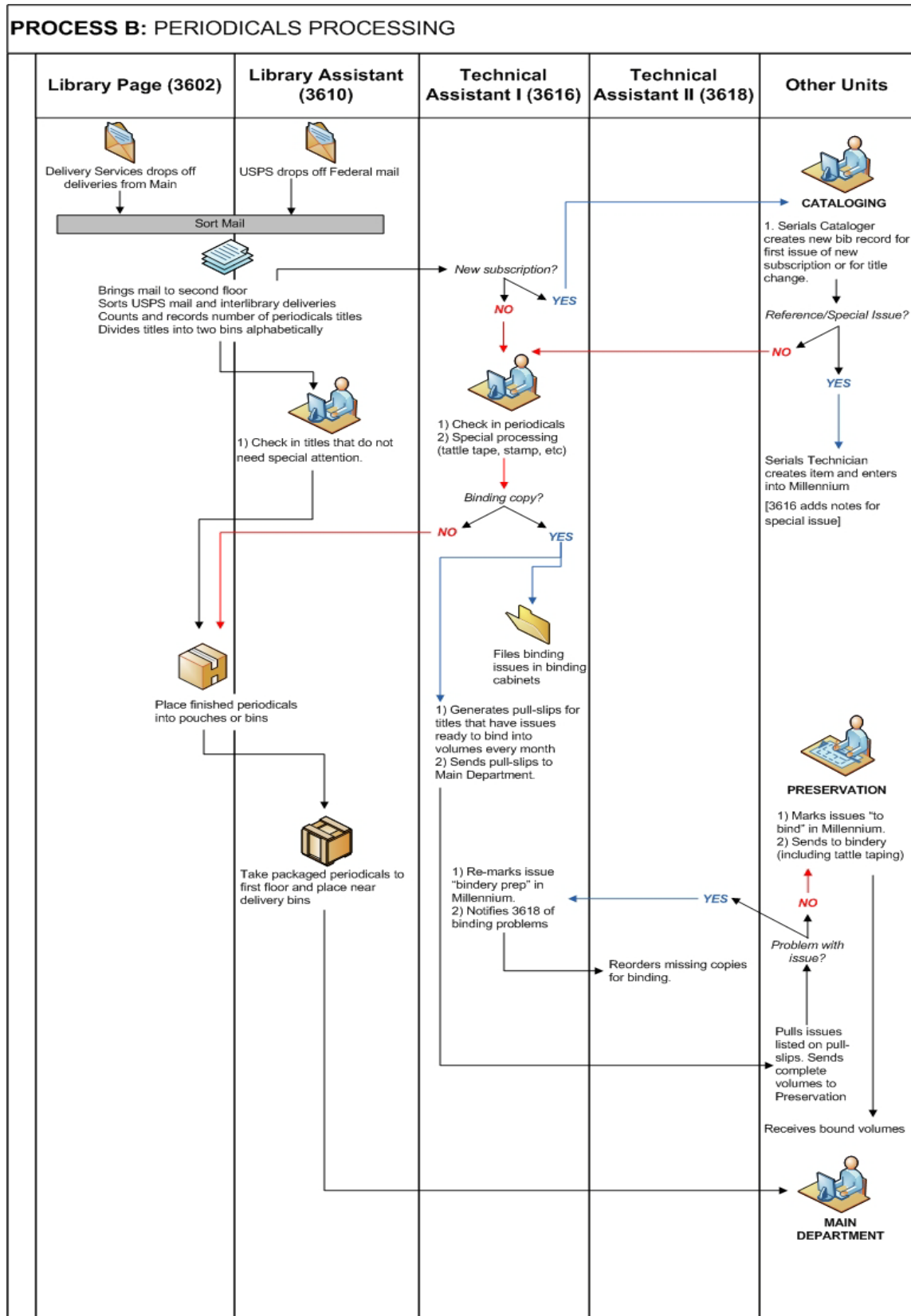
APPENDIX A – COLLECTION AND TECHNICAL SERVICES PROCESSES



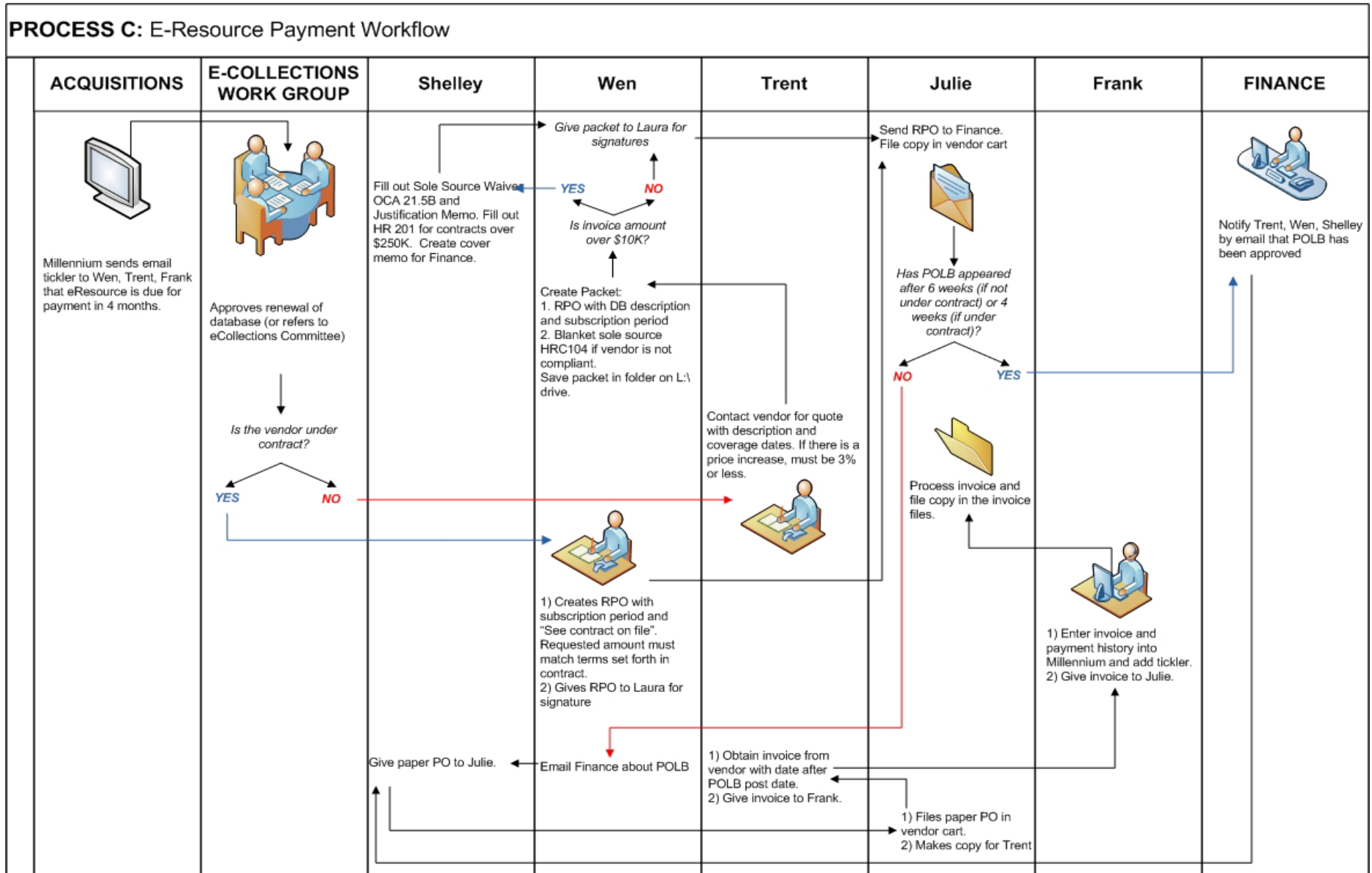
APPENDIX A – COLLECTION AND TECHNICAL SERVICES PROCESSES



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Appendix B – Library Staff Interview Guide

Date: _____

Interviewer Initials: _____

Introductory remarks:

The Controller's Office, City Services Auditor, conducts a variety of studies to improve the efficiency and effectiveness in City operations. The Library has partnered with the Controller's Office to review the Department's Collection and Technical Services Division. Speaking with you today will help us get a sense of the processes within the Division and the role of each unit and your input is greatly appreciated.

This interview will include four open-ended questions with some follow-up questions. The conversation will not be recorded but I will take notes. There is no right or wrong answer to any of the questions. You are the expert of your own position and I am here to learn from you.

Do you have any questions?

Interviewee Unit:

Time in position:

Questions:

1. What role does your unit play?
2. What does a typical day of work look like for you?
3. Do you ever face backlogs within your unit? Within the division? If so, where?
4. In your opinion, what do you see as the primary causes of any backlog?
5. Does your unit have performance goals and expectations?
6. Do you have suggestions for ways to improve your unit's work? Your division's work?

Do you have any additional comments or anything else that you'd like to share with me?