

Multnomah County Library Materials Handling and Collection Management Study

Final Report and Recommendations

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Executive Summary

Multnomah County Library is a well-respected library system that serves a vibrant and active user community of over 700,000. The Library circulated almost 20 millions items in 2006/7. The system filled over 192,000 holds in July of 2007 and moves over 20,000 crates full of material between libraries each quarter.

Even though the Library completed a cycle of renovation and expansion throughout the entire system in 2004 and will soon open two new branches, physical space available in the current buildings is inadequate to house the collections and provide for materials handling workspace.

The Library is able to offer its patrons a collection that is continuously being renewed with new materials in all formats due to a well-funded budget for new library materials. The FY08 collection budget is \$6.8 million. However, the size of the collection is out of sync with the size of the branch libraries. In order to make space for new materials, staff must essentially discard a volume for each new volume purchased. It is very difficult for library staff to keep up with this requirement. As a result, library shelves are overcrowded and interlibrary deliveries and hold requests are routinely backlogged for days in some locations.

In order to continue to offer MCL customers access to a rich, deep collection that can grow as Multnomah County's population grows, the Library must establish an offsite service center that provides secondary storage space and room for an automated sort and delivery operation . The items in off-site storage will be managed by an automated retrieval system, and an automated sorter will sort interlibrary delivery. This will eliminate some of the processing currently performed in the libraries by pre-sorting material and providing for crate check-in of material. The sorter will interact with the off-site storage system to ingest and retrieve crates upon request by library personnel making the request through the ILS. Delivery will be optimized by the sorter and storage system which also acts as a delivery staging system so that delivery personnel can quickly and easily offload their trucks at the end of the day, and load them at the beginning of the day.

The new service center will also provide the library with additional office space for some of the departments currently operating out of the Library Administration Building including the Sort Center staff, delivery staff, and Technical Services. This will provide much needed space for Library Administration and other workgroups that need additional space, and optimize the work of Sort, Delivery and Acquisitions working out of the service center.

Library sorters with automated self check-in systems are recommended at Central and three regional libraries in order to eliminate the backlog of material waiting for check-in from delivery and bookdrop and to allow these libraries to redistribute staff to handle the high holds volume, reshelving requirements, and other tasks that are being neglected due to the overwhelming backlog.

Stand-alone bookdrops are recommended for busy transit areas to provide additional drop off points for customers and to reduce the workload carried by the libraries that happen to fall in these busy areas but for whom the extra workload is crushing.

In addition, several policy recommendations have been provided including the importance of moving aggressively to a new self-service model with improved self check-out machines based on RFID justified largely because of the ability to implement improved materials handling operations while providing security for library material (which supports the security project already underway at Central.)

Given the high circulation and holds volume, the collection size and the commitment to retaining a rich collection, and the desire to continue to provide excellent service in the existing library outlets, the only viable option is to move as much material and processing as is feasible from each of the library outlets. A service center which eliminates much of the processing and materials handling work in the branches while providing a cushion for holding some amount of the library's collection will give MCL the breathing room it needs to transition to a service model that makes sense for a state-of-the-art public library. Such a service model includes customer-driven services and activities, a broad range of self service options, and library spaces that support collaboration and community.

The system described will require an additional 7 FTE and will cost \$5,891,000 in capital funds, approximately \$210,000 annually and will require acquisition of a service center space no smaller than 30,000 square feet, with 30 ft ceiling height in the sorter area.

Introduction

This report provides recommendations related to materials handling and collection management at Multnomah County Library (MCL). The recommendations are based on the findings reported in the Appendix.

Lori Bowen Ayre, Principal Consultant at The Galecia Group, was hired by Multnomah County Library to address several pain points related to materials handling and the Library collection. Specifically, the Library stated the following:

- MCL has many small neighborhood library buildings with workrooms too small for the growing materials handling operation.
- Having completed a major system-wide renovation and building project in 2004, expansion of the existing buildings is not a viable option. Even if funding were available, building larger buildings in the urban environment is difficult to impossible.
- MCL does not have the physical capacity to house and service the collection it can afford to provide and the public demands.
- Aggressive weeding undermines collection richness and balance. It also limits the scope of materials found in branch libraries.
- MCL has experienced a shift of public use from the large Central Library where 42% of the collection is housed to the 16 (soon to be 18) neighborhood libraries.
- Patrons rely heavily on the holds and reserve system to get materials they can't find at their local libraries; this is beginning to stress the materials movement system to the breaking point.
- The centralized Sort Center in the Library Administration Building is undersized to deal with the increasing volume of materials.
- MCL is experiencing an increase in worker's compensation claims related to manual materials handling workload.
- MCL needs additional office space for administrative, support and outreach staff.

In order to evaluate the situation and provide recommendations for addressing the pain points, Consultant spent several days visiting each of the libraries, talking with neighborhood and regional library staff, meeting with delivery staff, technical services staff, systems staff, and administration, and conducting focus groups with branch library workers. In addition, numerous documents, manual, spreadsheets, power point

slides have been provided by the Library and these have all been reviewed by Consultant. The findings are found in the Appendix.

This report provides a discussion of the critical factors contributing to the current materials handling and collection management issues. Trends in public libraries are also brought into the discussion.

Based on the findings, critical factors and trends, a set of recommendations is provided.

Public Library Trends

While libraries continue to play an important role in our communities, their role as the primary repository of information has been challenged by the information explosion. It is Google, rather than the library or even the library website, that people think of when they want an answer to a question. It is Amazon they look to when checking for the latest release from their favorite author. Even so, the library continues to be an important community resource. The library is a resource for not just books and information, but also for reading, studying, working, learning, entertainment, socializing, and playing. Despite the fears that the Internet would make the library obsolete, libraries have flourished.

While information technology has not replaced print media, and is not expected to do so in the foreseeable future, it has nonetheless had an astonishing and quite unanticipated impact on the role of the library. Contrary to the predictions of diminishing use and eventual obsolescence of libraries, usage has expanded dramatically—sometimes doubling or even tripling.¹

The convergence of the Internet as a medium and the explosion of information available through the Web and other information technologies have changed society's relationship to information. The library of the future will most likely be a mix of physical materials most suited to the print format and digital materials that support learning, study and recreation. Information is no longer scarce but abundant. But abundant does not mean free.

More and more information is being published in digital form and libraries increasingly purchase and license access to this digital information on behalf of their users. Libraries provide access to books as well as access to online information, CDs, DVDs, and electronic resources.

Whether a physical item such as a book or a journal article available in digital format through a subscription database, libraries proactively provide a wide range of information for customers. In addition, libraries must be able to get a very wide range of material, on request, for customers. Between reciprocal borrowing relationships and interlibrary loan, libraries are able to get information from almost anywhere, and often for free, from other libraries to satisfy their customer's information needs.

¹ Council on Library and Information Resources. (2005, February). Library as Place: Rethinking Roles, Rethinking Space. Council on Library and Information Resources, Washington, D.C. Available from <http://www.clir.org/PUBS/reports/pub129/pub129.pdf>.

In addition to the services related to information access, libraries also play an important role in developing today's literacy skills. Libraries help people read (literacy), evaluate information (information literacy) and use a computer (computer literacy). Though information on the Web is abundant, public libraries are more important than ever in leveling the playing field by ensuring that all members of society have access to information and have the skills they need to use computer and Internet technology.

Libraries as “The Third Place”

*Libraries are no longer the warehouses of content; they are social assembly places, participating in their larger communities.*²

Many people talk about the importance of libraries as the “third place.” The third place refers to the place you go that is neither home (first place), nor work (2nd place). In his 1990 book, *The Great Good Place*, Ray Oldenburg described “third places” as informal gathering places where people in a particular community or neighborhood meet to develop friendships, discuss issues, and interact/network with others. Oldenburg says that third places are crucial to a community for a number of reasons:

- They are distinctive informal gathering places.
- They make people feel at home.
- They foster relationships and a diversity of human contact.
- They help create a sense of place and community.
- They invoke a sense of civic pride.
- They provide numerous opportunities for serendipity.
- They promote friendship.
- They allow people to relax and unwind after a long day at work.
- They are socially binding.
- They encourage sociability instead of isolation.

Libraries play the role of the “third place” for many people in their communities. Libraries are one of the very few places where people can go, and stay, without paying to come in or buying something in order to stay. Libraries provide a safe, entertaining, informative, and fun environment for people of all ages and it is open for business seven days a week.

² De Rosa, C., Dempsey, L., & Wilson, A. (2004). *The 2003 OCLC environmental scan: Pattern recognition : a report to the OCLC membership*. Dublin, Ohio: OCLC Online Computer Library Center.

Libraries Provide On Demand Access to Material Beyond the Local Collection

Public libraries are taking up the call of Ray Oldenburg and emphasizing the library space as equally important, if not more important than the local availability of the library collection. Libraries are experimenting with new ways of providing access to their collections and changing how the physical spaces inside the library are used. For example, the San Jose Public Library has developed a set of guidelines referred to as the San Jose Way. One of the principles of the San Jose Way states that their collection management policies will emphasize “popular materials, media and families in branches with central resource ‘warehouse’ collection retrievable on demand.”³

Providing access to material “on demand” can take many forms. Not so long ago, interlibrary loan was considered on demand. However, a traditional interlibrary loan request can take weeks to fill, and today’s customers are not satisfied with such slow turnaround. Having material available on demand means getting it to the customer within a day or two, not a week or more. As more space in the libraries is used for people and activities, we must still be able to provide quick and convenient access to the library collection.

*In the past, expanding collections reduced user space; now, it is just the opposite. Technology has enriched user space, and the services for its support are increasing at a much faster pace than ever anticipated. Today, we are asked to consider whether a facility can accommodate dense, compact shelving or whether collections should be moved off-site.*⁴

Technology has made it easier to offer library customers access to more information than can be stored in a single library outlet. Library catalogs provide access to the entire library system’s collection with easy-to-use buttons to “Request Item” from any branch. Rich, online discovery environments are being developed that allow customers to locate material within their library’s physical collection (whether onsite or off-site), as well as the electronic resources (subscription databases, downloadable e-books and audiobooks, and digital libraries)⁵.

³ San Jose Public Library. San Jose Way Fact Sheet. Available from <http://www.sjlibrary.org/about/sjpl/sjway/>.

⁴ Council on Library and Information Resources. (2005, February). Library as Place: Rethinking Roles, Rethinking Space. Council on Library and Information Resources, Washington, D.C. Available from <http://www.clir.org/PUBS/reports/pub129/pub129.pdf>.

⁵ For more on the “new discovery environment,” see Lorcan Dempsey’s “The Library Catalogue in the New Discovery Environment: Some Thoughts” available at <http://www.ariadne.ac.uk/issue48/dempsey/>

Academic libraries have led the way in leveraging technology to provide access to the breadth and depth of their collections while optimizing the physical spaces for human-oriented activities (communicating, collaborating teaching, sharing, learning). More and more academic libraries are moving to automated storage and retrieval systems for providing quick access to locally stored, but not publicly browsable material. Institutions as large as Chicago State University⁶ and as small as Sonoma State University⁷ are using automated storage and retrieval systems as a way to build library spaces designed for people while ensuring that their collections are robust and accessible.

Self Service and Technology

An OCLC study from 2003 confirmed what most libraries were discovering: customers prefer to do things for themselves.⁸ Well before 2003, most libraries were offering self-service holds (the ability to find a title in the catalog and request that it be delivered to your local branch) and self check-out (check-out library material without interacting with library staff). In recent years, advances in technology have made it even easier for customers to use library catalogs to make requests, build queues of material they want, and select the pickup location most convenient for them. As a result, more people are using the libraries than ever before because it has become so easy to find what you want and get it delivered to your local library, if not to your mailbox.⁹

Self check-out machines have become easier to use too. Some libraries are seeing 95% and even 100% of their check-outs being done at self check-out machines. This level of self check use requires good technology, easy-to-use equipment, and a cultural shift in the library from one organized around “circulation and reference desks” to one organized around “self-service” and a more flexible staffing model focused on the customer’s needs.

The director of Queens Library described the changes they made as follows:

⁶ Huffstutter, P.J. (2007, April 22). Chicago State’s brave new library. Available from <http://articles.latimes.com/2007/apr/22/nation/na-robots22>.

⁷ See <http://library.sonoma.edu/about/ars.html> for information about the ASRS system used by Sonoma State University to store 750,000 items in a three story shelving system that provides access to material within 15 minutes of requesting them through the library catalog.

⁸ See <http://www.oclc.org/reports/escan/social/selfservice.htm>, an excerpt from OCLC’s 2003 Environmental Scan.

⁹ Many libraries have been experimenting with home delivery of requested material. Some offer the service for free such as Orange County, Florida and Topeka & Shawnee County Public Library. Others, like Multnomah County, provide the service for a small \$2 or \$3 per item fee.

There are two philosophies at work: re-imagining the space into a seamless environment for the customer and creating a more efficient workflow for staff. Improved workflow is at the heart of the renovations, with everything else fanning out from there. We are introducing central workrooms, where internal and external bookdrops go to the same place. This often means trading spaces between the workroom, which has usually been in the back of the library, and the public meeting/program room, which is usually at the front. Materials are checked in at one place and get back onto the shelves faster, reducing the transport of materials internally.

Rather than a large circulation desk with room for several staff members, smaller desks are being installed, with one staff member overseeing three or four RFID self check stations. More efficient materials handling and self-service yields more floor space that can then become teen lounge areas, more spacious reading rooms, and cyber centers. These efficiencies make more staff available for greater interaction with the public, such as special initiatives like better out-of-school programming¹⁰.

Libraries are employing technologies and automation as a way to free them up from the clerical and repetitive work related to materials handling and circulation. RFID tags are being used for quickly identifying and routing material and improving inventory control. Libraries are transitioning to self check-in and self check-out so that staff can spend their time providing more one-on-one support for customers. Automated sorters and automated storage and retrieval systems are being used to get material where it needs to be quickly and efficiently. These technological advances allow libraries to provide a higher level of service than ever before.

Public Library Users Need to Browse too

Libraries have taken cues from successful companies like Starbucks and Barnes and Noble who have demonstrated the importance of merchandizing. Rather than simply storing library material, libraries are starting to show it off by displaying book covers throughout the shelves and creating thematic arrangements featuring available material.

¹⁰ Galante, Thomas, quoted in "In Queens, a new service model means renovations," Library Journal, September 15, 2005. Available from <http://www.libraryjournal.com/article/CA6255532.html>.

Library customers can browse library shelves and get a sense of what is in a certain area just by looking at the displayed book covers and the sample items on the slat wall end panels. Dewey ranges¹¹ are usually still displayed but they are supported with descriptions and examples of material to be found. The goal is to encourage browsing and to entice the customer with library inventory.

Many libraries are creating special displays at the entrance of their libraries of high demand items that are not available for holds as a way to ensure that walk-in customers can find material that is popular or in the news. The Pierce County Library describes a “Bermuda Triangle” at the front of their libraries composed of the self service holds shelving, self check-out machines, and merchandized “Books Plus to Go” containing best sellers so that walk-in customers have a chance of finding hot new titles when they come to the library.¹²

Summary

The general trend is toward public library spaces designed around the customers’ needs and staff work spaces designed to support efficient workflow. Self-service and materials handling automation support these trends by taking up smaller footprints and allowing work to get done more quickly and more accurately.

The goal of the materials handling automation and self-service technology is to free up space and time so that the library becomes a place for everyone in the community: people reading quietly on their own, seniors seeking help from library staff finding health or tax information or entrepreneurs seeking the right tax forms for starting their own business. The library is a place for teens playing games or doing homework together, genealogy researchers tracking down ancestors in the subscription databases, children and parents attending story time or puppet shows, and immigrants getting from library staff and using library resources to learn English and find information about becoming U.S. citizens. The library is also a place to get free access to the Internet and to use computers, and also very important, where there is help available to learn how to use these tools.

¹¹ This refers to the range of numbers used to classify and arrange material in the library according to the Dewey Decimal System.

¹² See the article “Self check success: Pierce County’s new service triangle takes self-service to new levels.” Available from <http://www.libraryjournal.com/article/CA6400918.html?nid=3276>

Supporting the new library environment requires changing library spaces to support the way customers want to use the libraries and to optimize the workflows. In addition, staffing models have to change so that customers can get the support they need while doing more of the clerical transactions on their own.

Critical Factors

MCL is a very popular library system. In 2007, almost 20 million items were circulated, and 2 million holds were filled. There were 4.6 million visits to the library and 315,000 people attended library programs. MCL is responsive to the communities it serves and strives to offer services customers need and want, including increasing the number of bilingual/bicultural staff by 327% since 2004. As a result, more and more people are finding reasons to use MCL libraries. Two new libraries are in the planning stages.

Many people use the physical space of the libraries to browse, use public computers, participate in programs, and to get help from the staff. Many people also use the resources of the library but not the physical space. These people do their browsing online, request material for pick-up, and use other online resources. The library works hard to provide exceptional service to a diverse and growing community of both online and in-library users.

By every standard of measure, MCL is very successful. Compared to peer libraries (including Columbus Metropolitan Library, Cuyahoga County Public Library, and Hennepin County Library), MCL circulates more items per capita than the others and circulates twice as many per hour (or more) than any of the others.

Table 1: MCL Success (based on circulation)

	Circulation	Population	Circ/Capita¹³	Circ/Hour
Multnomah County	19,589,530	692,823	28.3	21,270
Columbus Metro	16,489,899	833,082	19.8	10,993
Cuyahoga County	15,945,104	629,334	25.3	8,814
Hennepin County	13,030,711	761,637	17.1	10,458
Denver Public	9,244,353	575,927	16.1	10,565

Success has not come without its challenges. MCL must find solutions to the problem of too little space for collections, customers, and personnel without sacrificing services. There are many possible approaches to the problem but all involve a trade-off. In order to lay the foundation for the recommendations provided in this report, several factors are highlighted because they play a critical role in creating the current situation and limiting the options available to MCL.

¹³ Public Library Data Service Statistical Report. (2007). Prepared by the Public Library Association, a division of the American Library Association. Chicago, Illinois.

MCL library buildings are very small for the use they receive

Each of the MCL libraries is bright and welcoming. The comfortable public spaces are largely a result of a 1996 bond measure which provided \$24 million for renovations, new construction and technology of the public areas. The renovations added 28,198 square feet to library branches. The 1996 bond measure followed a project that added 18,150 square feet to the Midland Branch and completely renovated, but did not expand, the Central Library.

Despite these renovations and additions to library buildings, MCL still has significantly less square footage per capita than other comparable libraries. At .38 sq. ft. per capita, MCL has only 25% to 50% as much square footage as comparable public libraries like Denver Public Library, San Jose Public Library, Cuyahoga County Library or Hennepin County Library. The two new branches set to open in the next year will both be small facilities of about 6,000 sq. ft. each.

Table 2: Square Footage of Comparable Libraries¹⁴

	Square Feet	Population	Square Foot per Capita
Multnomah County	265,762	692,823	0.38
Columbus Metro	551,447	833,082	0.66
Cuyahoga County	623,530	629,334	0.99
Hennepin County	464,512	761,637	0.61
Denver Public	775,739	575,927	1.35

MCL's appealing, renovated public spaces, and popular services have brought in more customers and made the libraries more popular than ever. As a result, MCL has higher use per capita, but less square footage per capita than any of its peer libraries.

It is unlikely that MCL will be able to double or triple the size of its footprint by enlarging or increasing branches in the near future because of construction costs, on-going operating costs and the difficulty of siting large buildings in an urban setting. That being the case, MCL must rethink the way it uses its public spaces and manage its ever-increasing materials handling workloads so that its libraries can continue to meet community needs despite their small size.

¹⁴ Public Library Data Service Statistical Report. (2007). Prepared by the Public Library Association, a division of the American Library Association. Chicago, Illinois.

Use of self-service holds system has skyrocketed

One of the very popular services provided by MCL is self-service holds pick-up at the customer's preferred location. Debuting in 1989, Multnomah County was one of the earlier library systems to allow customers to request material from another library to be delivered to their local library. Self-service holds were offered as a way to extend the rich MCL library collection to all customers regardless of the size of their home library. While it has always been possible to request material from another library by requesting a title from a staff person who then made arrangements on behalf of the customer, the transition to self-service hold requests from other library branches made the entire collection more available to all customers. Customers appreciated the ability to have their material waiting for them to pick-up regardless of where it had originally been shelved.

Between 2003 and 2006, public libraries everywhere experimented with ways to integrate self service holds pickup with their other service offerings. The service was so popular everywhere that it required libraries to adjust workflows and use of library spaces. Special holds shelves were designated so that customers could pick up their own items, but this cut into shelving previously used for browsing. Interlibrary delivery services were ramped up to accommodate the demand. MCL, like other libraries nationwide, struggled to make difficult choices between limited resources such as shelving space for material and the staffing required to support the new materials handling requirements related to holds. In 2000, MCL introduced self-service pick-up shelves (holds were no longer stored behind the circulation desk) so that the entire transaction (except possibly the check-out process) was self-service.

Nationwide, the popularity of the self service holds continues to grow. At MCL, 1,488,935 holds were placed between January and June, 2008. This is a 9% increase from the previous year. Related to holds increases are circulation and first time check-out increases. Since 1999, circulation has increased by 112%. In July, 2007, first time check-outs hit 700,872 (an increase of 10% over the previous year).

The space and staffing requirements associated with self-service holds continue to be a significant factor at MCL libraries.

Self-service check-out systems out of date at MCL

Self check-out machines for libraries were first introduced in the late 1990's by 3M. MCL bought these first generation machines and they were installed in Midland in 1996 and Central in 1997. As the branches were renovated, the 3M machines were installed in the libraries large enough to accommodate them. Due to space constraints, no self check-out machines were installed in Albina, Fairview, Gregory Heights, North Portland, Rockwood, or St. Johns.

Since these first installations, MCL has not added additional self check-out machines, upgraded their existing ones, nor promoted the use of self check-out in any formal way. In fact, use of self check-out technology has been undermined by the policy of keeping some material behind the circulation desk (for security purposes).

Many other libraries have moved beyond the original 3M self check-out machines with new 3M models such as the V-Series or have purchased self check-out machines from other vendors.¹⁵ In addition, many libraries are now adding self check-in systems and providing more self-service options for fines and fees payment (e.g. stand alone kiosks paying fines and fees, or self check-out machines that allow for fines and fees payment).

Although MCL has been a library leader in many ways, the adoption of self-service technology and self check-out in particular, is out of step with current trends.

Staff work spaces are too small to accommodate current service demands

While the renovations provided much needed improvements, increasing demand for services has outstripped branch capacity to handle today's workload. Most of the MCL's workrooms are too small for the number of people who need to work in them and the amount of material that must be handled. Some lack offices for library managers. Library staff routinely share workstations.

One of the factors contributing to the lack of workspace is the high volume of delivery crates that require processing. Data from the Sort Center shows that in the first quarter of 2004, 13,912 delivery crates were sent to branches for processing. By the third quarter of 2008, that number had grown to 21,947, an increase of 58%. Increased borrowing and use of the hold system by library patrons is a major factor in this delivery increase. From FY04 to FY08, check-outs were up 28.5 % and holds filled increased 15.5%

With the already small work areas plus the ever increasing amounts of circulation, holds filled and interlibrary delivery, MCL libraries are struggling to keep operations running smoothly.

Shelf space is too small for the collection

Multnomah County residents benefit from the size and scope of the library's collection which is supported by a materials budget sized to meet customer

¹⁵ Library self check vendors include 3M, Envisionware, Integrated Technology Group, Library Automation Technologies, Libramation, and others.

demand. A constant stream of new materials selected to keep pace with newly available material ensures that MCL customers will have the current titles they desire. The materials budget ensures that the collection stays fresh and appealing to the diverse communities the library serves. The limited shelf space in library locations, however, creates a situation where the library must constantly weed to make room for the new material. While this is a standard practice of collection management, the scale of weeding required at MCL due to limitation on shelf space compromises the scope of the collection itself.

Deselection (aka weeding) has become a challenging task that consumes staff time in an attempt to create more shelf space. The library weeds in several ways, including monthly scheduled branch weeds using teams of library staff and community volunteers. In addition, the Selections Office works with branch staff to produce reports on low circulating items in specific collection areas to support weeding by branch staff. Staff in many locations weed daily as part of general operations. All libraries weed based on condition (i.e., items are discarded when they become worn or damaged) on a continual basis.

The need to remove materials from the collection due to lack of adequate shelf space has gone beyond good practice. It works against collection richness and limits the ready supply of materials on the shelf. It negatively impacts the customer experience by forcing the removal of materials that are not the most popular but still have relevance and appeal.

Confluence of factors

The combined effect of these critical factors is that MCL libraries are bursting at the seams: interlibrary delivery demands continue to grow and sometimes there is not enough space to leave all the items ready for delivery at a given library; it is difficult to keep up with incoming new material and weeding requirements; and, the shelves are more full than is ideal for optimizing browsing for customers and ensuring that management tasks can be performed efficiently.

Some of the libraries are too small for self check-out machines. Others have them but they are not used very often because the machines are difficult to use and picking up DVDs or any media item on hold requires a visit to the circulation desk anyway.

The effect, over time, of these interacting factors is a worsening cycle. More holds causes more work for staff in processing the material and the delivered items take up more back office space so staff cannot work efficiently. More holds also requires more dedicated holds shelving. More dedicated holds shelving takes space away from the rest of the collection which reduces the number of titles available to people walking into the library. This causes some libraries to crowd more material into smaller spaces so that fewer books are on display. When customers don't find what they want in the library, they place yet more holds which creates more work for staff, which takes up more workspace and more shelving dedicated to holds, and on and on.

Limited options

There are a number of options to consider for addressing the current situation, but most are not desirable and/or viable: stop allowing patrons to place holds; replace libraries that are too small with new, bigger libraries; reduce the materials budget; reduce the size of each library's collection to make more room for holds and staff work areas; deliver requested items directly to library customers for free; extend loan periods.

Discontinuing the service of self-service holds is not desirable because it would take away one of the Library's most popular services. Building new libraries with more shelf space and larger workrooms is not the most cost effective or efficient way to solve materials storage and handling problems that exist at all the outlets. Reducing the materials budget or the size of the library's collection would reduce its popularity and value to the community. Delivering requested material directly to library customers would be extremely popular but difficult to sustain financially (it is now available for a \$2 per item fee and is lightly used).

It is important that any proposed solution adds value to each library outlet and does not weaken the appeal and relevance to the community it serves. In the report "Libraries That Matter" by the Project for Public Spaces, authors Cynthia Nikitin and Josh Jackson describe the success of "libraries that matter" to their communities:

At their best, these new libraries serve as centers of discovery and communication--places where people gather and where information comes alive through teaching and personal interaction. Indeed, to distinguish themselves in a world where Google is well on its way to digitally scanning most of the books ever written, libraries are learning to take advantage of the simple fact that they are centrally located in almost every community. In other words, libraries now see success being linked to their role as public places and destinations.¹⁶

MCL's community libraries are enjoying more activity than ever before. People flood the libraries to use the public computers. Programs ranging from early literacy to ESL and story times to summer reading are at (and over) capacity. The libraries provide a safe place for kids to go after school to socialize and do homework. New Americans rely on their community libraries for educational material. Immigrants count on the community libraries for news and entertainment in their native language. And some people just use the community libraries to pick up their requested material. The physical space of each library is more important than ever before as both a venue and a resource center. And, as is already being seen, when the economy suffers, library use goes up, so helping the community libraries flourish is now essential.

These critical factors suggest that solutions that will most benefit MCL will result in creating more space in the community libraries for programs and people without reducing the size of the collection and the availability of new and popular material.

¹⁶ Nitikin, C. & Jackson, J. (2007, April). Libraries That Matter [online report]. Project for Public Spaces. Available from http://www.pps.org/info/newsletter/april2007/libraries_that_matter/

Proposed Solutions

The recommendations being proposed fall into the following six groups:

1. Group One: automate the sort and delivery operations;
2. Group Two: create an off-site storage system that is integrated with the central sort operation;
3. Group Three: add automated sorters at Central and three regional libraries;
4. Group Four: add stand-alone bookdrops and expand the Delivery team;
5. Group Five: make policy and procedure changes; and
6. Group Six: expand self-service options.

The first, second, and third group of recommendations are multi-faceted and capital intensive. These recommendations will provide the greatest support for MCL's community libraries, will alleviate the materials handling backlog, and help ensure that MCL continues to provide excellent service to its communities well into the future. To be most cost effective, Group One and Group Two recommendations should be implemented at one time.

The fourth group of recommendations will provide some immediate relief to the neighborhood libraries plus it will result in more convenient materials return for customers. This could be done immediately.

The fifth set of recommendations includes suggestions for modifying MCL policies and procedures to better position the Library for the future. Some of these recommendations will help alleviate some of the pain points while the larger, capital-intensive recommendations are put into place.

Finally, the last set of recommendations is provided to help the Library move forward toward a service model that conforms to current thinking about appropriate service models and use of library space that addresses both the needs of customers and library staff.

Group One Recommendations: Automated Centralized Sort

The most effective way to help alleviate the overcrowding problems in the libraries (aka too much material and too many people in too small spaces), is to move as much as possible of the processing of material to a central, optimized location. Automating the sort and delivery operation will do just that.

The functional characteristics of the automated sort operation include:

1. Automated sorter with at least 100 sort locations to provide rough sorted material (Returns (RTS), holds, media, possibly other categories) to each location;
2. Sorter provides crate check-in so that individual items in a crate are checked in via a batch process;
3. Sorter communicates with ILS to determine status of each item. Status will determine sort location;
4. To ensure next day turnaround system-wide, design characteristics of sorter (throughput, sort speed, number of inductions, number and type of sort locations) must be such that 100% of all library material can be processed daily;
5. Sort operation includes an automated storage and retrieval system (ASRS) that provides staging for delivery crates.

The sorter and automated storage and retrieval system envisioned is based on the King County Library System's operation in Preston.¹⁷ The sorter in Preston is larger than the system required for MCL; however, the basic functionality is similar insofar as the ASRS is coordinated with the sorter via the Warehouse Control System (WCS).

One difference between the Preston system and the recommended MCL system is the off-site storage role that the ASRS plays. At MCL, not only will the system be used for delivery crate staging and storage, but it will also provide an off-site storage option for community libraries, the Central Library, and the system as a whole. This will be discussed in Group Two Recommendations because it could be implemented separately from Recommendation One. However, it would be more cost efficient to implement Recommendations One and Two together.

How the proposed system works

The proposed system includes a sorter, an automated storage and retrieval system, a rack for storing crates, a Warehouse Control System, a stacker/unstacker, and conveyors that move crates where they need to be.

¹⁷ For a video tour of the Preston system, see <http://www.youtube.com/watch?v=4fq3CWsyde4>

A large storage rack is used for holding incoming and outgoing crates. Cranes are used to move the crates in and out of the rack system. The cranes are controlled by automated storage and retrieval system (ASRS). To extract a crate, a crane moves into position in the rack and pulls out the designated crate. The crate is then placed on a conveyor which takes it either to the stacker (if the crate is being delivered to a driver) or to an induction staff person (if the contents of the crate are waiting to be inducted onto the sorter).

The sorter is used to sort individual items to one of 100 sort locations on the circular sorter. Each sort location holds a crate (if possible, the same crates as used by delivery now) with a capacity of approximately 35 items.

The Warehouse Control System (WCS) is a software program that controls the movement of material between the storage system and the sorter. Conveyors are used to move crates between the rack system and the sorter and to the delivery pick-up/drop-off location. The WCS communicates with the ASRS system.

Stacks of crates are deposited at the delivery/pick-up station for ingestion into the system and taken by conveyor into the ASRS (after being “cingulated (aka unstacked). This station is also where stacks of four crates are delivered for drivers starting their route.

The sorter is equipped with 6 induction stations that are staffed by “induction staff.” Items have to be manually removed from crates and placed on the conveyor where they are automatically fed into the sorter.

The sorter operates by reading the bar code or RFID tag on the item. The WCS communicates with the Library’s ILS via a SIP2 connection. The WCS tells the sorter how to sort the item based on the SIP2 message from the ILS. Depending on the item’s status and the programming of the WCS, the item will be sorted to the appropriate crate (e.g. an Adult Material return crate for Central, or a media return for Belmont, or a Hold for Albina). Initial programming of the WCS will be done with the Library and the AMH vendor; however, once operating, the Library will be able to continually modify the sort program according to their own needs.

Automated sorter provides for crate check-in in libraries

Each sort location is equipped with a bar-coded crate. As the sorter drops items into the crate, the WCS builds a manifest of all the items in each crate so that the crate can be checked in at the library. The crate check-in process will initiate a batch process that causes all the items in the crate to be checked into the ILS. The result of the crate check-in system is that library staff scanning is reduced from 45 scans (of each item) to one scan (of the crate).

Once a sorter crate is 80% full, a light indicates that it needs to be swapped out alerting “chute staff” to remove the full crate and replace it with an empty. The full crate is put on the take-away conveyor which returns the crate to the ASRS system where the crate stays until it is recalled for delivery.

Optimizes loading and unloading of delivery trucks

Drivers unload their trucks to a loading dock in stacks of 4 crates to a take-away conveyor which un-stacks and places each crate into the rack. The fact that drivers can simply drop off stacks of four crates at a time makes the process of unloading the truck very quick and easy.

When drivers arrive to begin their delivery routes, they enter the name of the route they are about to run. The system pulls the appropriate crates out of the rack, stacks them into a stack of four and delivers them to the pick-up station so the driver can load his truck. The system delivers the crates in the order needed for optimizing the driver’s delivery operation, so this part of the process is also very quick and easy.

Group Two Recommendations: Off-site Automated Storage and Retrieval System Integrated with Sort Operation;

The ASRS and rack system described for staging delivery crates can be easily used for providing off-site storage for MCL as well.

The functional characteristics of the off-site storage system are:

1. The rack system will be configured with 8000 crate locations (enough for delivery needs as well as for storing almost 300,000 off-site storage items);
2. The ASRS will be regulated by a Warehouse Control System which will coordinate the traffic in and out of the sorter, ASRS, and will communicate with the ILS;
3. Community library items stored in the off-site storage system can be managed by owning libraries who would continue to be responsible for management of their “off-site” collections;
4. Central library items stored in the off-site storage system would be managed by Central staff who would continue to be responsible for management of their “remote stacks” collections;

5. Crates will be pulled out of the rack by the cranes when items are recalled from off-site storage through the ILS. An off-site storage picker (staff position) will pull requested items out of the crate and induct them onto the sorter for delivery to the requesting library;
6. New acquisitions can be ingested into the sorter just like other interlibrary deliveries. New items automatically trigger holds as they pass through the sorter.

The precise role that an off-site storage option will play must be determined by the Library after clarifying the role of the community libraries and Central. It will require a thorough evaluation of the Library's collection philosophy and policies (see Recommendations 4). There are a number of possibilities that open up with the introduction of this technology and any number of approaches could help resolve the problem of more items in the MCL collection that can fit on library shelves. It will be important for MCL to define a collection management policy that conforms with their collection philosophy.

However, without adding *some* kind of additional storage space for library material, each time a new item is purchased, something has to be weeded. Valuable items are being weeded to make room for new material, the shelves are too full, and there isn't enough space in the libraries for people and activities and backroom workspace.

An off-site storage system optimized for easy and quick retrieval that is integrated with the delivery system creates new opportunities for expanding the collection without worsening the materials storage situation or weeding more heavily than is ideal.

The advantages of storing items in the off-site storage system are:

1. Items stored off-site will be easy to access by making a request through the ILS;
2. Storage of items is more compact and less labor intensive to manage than items in Stacks;
3. Climate control can be better managed in the off-site storage unit than in the basement of the Title Wave (and possibly other places material is currently being stored);
4. Storage of items is cheaper (per square foot) in the off-site storage system than material stored on publicly accessible shelves.

Some of the material that could be moved to the off-site storage system include: Stacks, material from the basement of the Title Wave, popular items being used to fill holds, lower circulating material that has permanent retention value to users (i.e. classics, mid-list fiction and other “long tail” items), seasonal collections, and other sets of material used for programs from the neighborhood libraries. Material currently stored at Central or in Stacks could be moved to the off-site storage system where temperature and moisture would be better controlled and access to materials would be quicker. The system creates an opportunity to rethink how public spaces at Central are used. The system would help create more work space for libraries by removing seasonal and other small collections in the backrooms. It might also create more space in the libraries by allowing some holds to be filled from the off-site collection. And finally, the system may make it possible to keep some of the older items that are currently being weeded due to the number of new items being added to the collection.

How the off-site storage system works for libraries

The ILS system is used to request material from off-site storage just like any other interlibrary transfer. Essentially, staff place “holds” on the material, which results in it being extracted from the storage system and delivered to the requesting library. Management of items in the off-site storage system is a combination of automated and manual processes. As with delivery, the ASRS system keeps track of every item in every container stored in the rack.

When an item is requested through the ILS, the message is sent to the ASRS via the WCS. The WCS tells the ASRS which items are needed and which container that item is in. The ASRS crane pulls the container out of the rack and delivers it to the “ASRS picker” (a staff person) who pulls the requested item out of the crate and places it on a conveyor which takes the item to the sorter. The sorter sorts it to the appropriate crate for delivery based on the WCS program and the ILS message.

The system could also be configured to pull entire crates from the rack so they can be sent directly to the library (without going to the ASRS picker). However, this may have to be handled outside of the ILS system.¹⁸

¹⁸ This feature was not included in the original specifications provided to FKI Logistex who provided the cost estimates. It could cost more to add this feature than is worthwhile.

Items being returned to the ASRS system or being loaded for the first time into the ASRS are sent to the service center by library staff (the service center appears like another library branch) via delivery like any hold request. The sorter reads the destination and sorts the item to an ASRS crate. When the crate is full, “chute staff” place it on the take away conveyor which takes the crate to the “ASRS picker” position. The “ASRS picker” optimizes the material in the crate before finalizing it for induction into the ASRS.¹⁹ Once finalized, the crate is loaded into the rack.

As envisioned, each library would retain control and management responsibilities over their own off-site storage items. For example, ongoing weeding of off-site storage material would continue to be the responsibility of owning libraries and rotation of material in and out of the off-site facility would be the responsibility of the owning library. Material in off-site storage would be included in the monthly weeding lists generated by Technical Services so that each library treats the locally stored material and their off-site stored material as one unified collection.

Despite the vision presented here, how the off-site collection should be managed will depend on how MCL decides to use the system. Management could be controlled by the Central Library, Stacks staff, or by Collection Management and Technical Services staff. What makes sense for MCL will need to be determined as part of larger collection management plan. To the extent that material can be more easily requested and placed into the off-site storage, it is recommended that a thorough evaluation of material currently stored in stacks and in public shelving at Central be undertaken to determine the best location. Decisions should be based on how frequently items are accessed, how suited the current storage or shelving space is to its current purpose, and how well the environment suits the material (some material may do better on shelves in the basement while other material would benefit from better temperature and moisture controls available in a new facility).

New opportunities for Central

The determination of what to store in each location will have a large impact on the role of the Central Library; however, it is clear that a discussion about the role of Central will need to be undertaken first. Community library door counts continue to go up while visits to the Central Library go down. In order to continue to serve the urban population of Portland, changes in how the physical spaces at the Central Library are used must be made. Moving material out of public shelving is one way to create opportunities for redefining many of the Central library spaces.

¹⁹ It is not essential to optimize each crate before storing it in the rack; however, it may be a useful step for crates that are going to reside there for a certain amount of time. The more compact the crates, the greater the capacity of the off-site storage system.

The Central collections (publicly stored material, material in filing cabinets, and material in stacks) as well as the material currently stored in the basement below the Title Wave require evaluation beyond the scope of this report. However, it is clear that adding a high-capacity storage facility in a controlled environment with quick and easy access to individual items opens up an opportunity to completely re-evaluate how system-wide collections should be stored and what role the Central and neighborhood libraries will play.

Group Three Recommendations: Automated Sorters in Libraries.

The Central Library operates a manual sort operation in the basement for sorting items that have been requested by the neighborhood and regional libraries. None of the regional libraries have a sort operation comparable to Central's. The sort area is large enough for its purpose and the space and process has been optimized. It is a manual system, but it is very efficient. Central material going out to other libraries is sorted by Central staff. None of the material is sorted at the Sort Center (at Library Administration). The delivery team picks up all the pre-sorted material and delivers it directly to the libraries.

All returns (at Central and the regional libraries) are sorted to shelving carts. At Central, the ready to shelve material is staged in various "parking lots" throughout the Central Library.

Central and the regional libraries would benefit from an automated sorter for sorting material to ready-to-shelve book carts and delivery crates.

The functional characteristics of the library sorters suitable for Central and the regional libraries are:

1. Each sorter will have 9-11 sort locations (possibly several more for Central) to allow for rough sorting all returns to ready-to-shelve book carts;
2. Each sorter will have at least one sort location dedicated to material that triggers a hold at another library. This material will be sorted to crates;
3. Each sorter will have at least one sort location dedicated to material that triggers a hold at the local library. This material will be sorted to a ready-to-shelve book cart and a hold slip will be generated at a printer staged next to the sort point;

4. Each sorter will have one staff induction for feeding in returns to the sorter which will be checked in and routed to one of the remaining 7-9 (possibly more at Central) sort locations thus providing rough sorted material ready for shelving. These sort locations can be configured with ready-to-shelf book carts or larger capacity bins;
5. Each sorter will be configured with at least one (possibly several at Central) self check-in units which feeds customer returns directly to the sorter for immediate check-in and holds triggering.

Implementing automated sorters at Central and the regional libraries will eliminate the work of rough sorting material for shelving. The current practice is to use book carts for very rough sorting while checking in material from bookdrop. In the smaller libraries, these shelving carts are then taken out to the shelves and material is fine sorted and shelved. However, in the larger libraries, there is often another sort step in which the rough sorted, just checked-in material is then sorted to another set of shelving carts before shelving. Such a system results in each item being handled multiple times and increases the return-to-shelf time.

For maximum benefit, all returns should be inducted by the public into an automated book return which can be located on an outside wall of the library for 24/7 access or inside the library where it is closer to the sorter (and therefore requires a shorter conveyor run).

With an automated return, the returned material is only handled by a staff person once while being shelved because the automated system checks in the item, sorts it to the proper cart and then the shelver detaches the cart from the sorter to fine sort and shelve the contents of that book cart.

With a bar code based sorter, media returns would still need to be opened to verify the contents of each case; however, with an RFID based system, it may be possible to eliminate even that step.

The sorter can be configured with a variety of sort locations and receptacles. To optimize the return-to-shelf process, sort locations should be configured with ready-to-shelve book carts. However, the ready-to-shelve book carts only hold 40 items so it is important that staff are actively monitoring the sorter (to replace full book carts with empties). Larger bins and trolleys can also be used at sort locations (capacity of 150-200 items each) if it won't be possible to keep up with the number of items being sorted to a particular location.

Material requiring interlibrary delivery can be sorted directly to crates which are easily removed from the system and set aside for drivers to pick up. Incoming delivery items can be inducted into the sorter as well. Even though the items can be checked in at the crate level (with crate check-in), libraries still find that the benefits of sorting to ready-to-shelve carts makes inducting these times into the sorter worthwhile²⁰.

Libraries introducing automated sorters find that the duties of library staff must change. Duties don't necessarily fall into the traditional page and clerk job descriptions that exist for libraries relying on fully manual systems. For example, staff that had been checking in bookdrop material can be re-allocated to front-of-library activities, do program work, help customers, and assist with shelving (perhaps while roving). The automated sorter provides an opportunity for diversifying the work of all staff because it takes the most time-consuming, physically demanding, and rote tasks away.

Group Four Recommendations: Bookdrops and Technical Services

All operations related to Sort, Delivery and Technical Services will be moved to the service center. Stand-alone bookdrops will be placed in strategic locations and will be the responsibility of Sort and Delivery staff.

1. Add stand-alone bookdrops in busy locations where it is convenient for customers to return material

One relatively easy-to-implement solution is to add stand-alone bookdrops in busy areas to take some of the pressure off the library book returns. The bookdrops will be the responsibility of the service center staff and delivery team. The bookdrops will hold as many as 500 books (1250 DVDs). Placing these units around town at locations convenient for customers provides a way to make returning material even more convenient for customers while reducing overflows in the library bookdrops.

²⁰ An informal study was conducted at King County in which two comparable libraries were compared. One library used a library sorter and the other used all manual processes. Both libraries received crates that could be checked in (so each item didn't need to be scanned). The library that used the sorter to do the sorting (which involved inducting each individual item into the sorter even though the crate could have been checked in in one fell swoop) used many fewer staff people to do bookdrop and delivery check-in and eliminated their backlog.

The number of bookdrops and their optimal location will require additional analysis of return patterns and library capacity. When selecting bookdrop location, consideration should be given to the convenience it will provide customers as well as the relief it will provide for libraries that receive an inordinate amount of returns. Four of the libraries that are considered “drop off libraries” are Albina, Belmont, Hollywood, and Midland. See Table 3 below. Both Albina and Belmont are very small libraries yet they receive as many as the regional libraries (Hollywood and Midland).

Table 3: Number of items returned in one day at “drop off libraries”

Library	Sample from November 18, 2008
	Returns
Albina	1,269
Belmont	2,357
Hollywood	2,750
Midland	1,884

Adding just four bookdrops for the purpose of deflecting the number of items being returned to these libraries (especially the neighborhood drop off libraries) could reduce their daily bookdrop volume by 25% or more (six bookdrops are recommended).²¹

2. Pick up bookdrop contents daily and check-in material the same day at the central sorter. Next day delivery to destination library guaranteed

Each bookdrop must be visited daily by delivery staff so that material is taken to the service center for check-in at the automated sorter. The benefit of the bookdrops are lost if the material doesn't get checked in promptly. Customers will need to be assured that anything dropped in a library bookdrop by a certain hour will be recorded as returned that day.

²¹ Topeka and Shawnee Public Library provides 16 bookdrop locations at markets, shopping centers, and schools. See http://www.tscpl.org/info/section/book_drop_locations/.

3. Move Technical Services to Service Facility

One of the pain points noted by MCL is the shortage of office space at Library Administration. In order to make more space available at Library Administration, all of the workgroups associated with receiving, sorting and delivering material should be moved to the service facility. This includes the entire Technical Services department responsible for selecting, ordering, receiving, cataloging, and processing new material. The Sort Center, Supply Room, and Delivery team would also move to the service facility.

Moving Technical Services along with the Sort and Delivery staff creates a streamlined materials handling environment. New material that is received, processed and ready for distribution to the libraries can be integrated with the workflow of the automated sorter which handles staging of all delivery. Rather than having Sort Center staff trigger holds on new acquisitions (as is done now), the sorter would automatically trigger holds and route the new items accordingly.

4. Centralize work related to snags, redistributing shared collections, and mend/replace tasks

Each library currently dedicates shelf space to CD and DVD cases with missing contents (snags). When CDs and DVDs are returned, staff check to make sure the correct media is inside. When it is missing, the last borrower is contacted. Sometimes the missing media is returned (after the last borrower finds it in their DVD player) but sometimes media ends up in the wrong case. Rather than leaving it up to neighborhood libraries to match the missing parts of a CD or DVD set (after contacting the last borrower), this work should be handled by service center staff.

Shared collection material²² (aka floating collections) have a tendency to “puddle” meaning sometimes large batches of material are returned to one location. Sometimes the library isn’t a good match for the returned material; perhaps they are duplicative of material already on the shelves or perhaps there is just too much for the library to absorb. Rather than calling around to other libraries looking for “takers,” it would make more sense for the Technical Services staff to take responsibility for reallocating shared collections when they are returned to the service center by library staff.

²² Shared, or “floating collections” are items that do not have an owning library associated with them. As such, when they are returned to a library, they stay at that library. The logic behind floating collections is that the customer’s use patterns will cause material to move around the system and find its way to the libraries where it will get the most use. This theory has generally proven valid although there are some minor adjustments (like the one described here) that often make it work even better. The incentive for establishing shared collections at MCL was to relieve strain on the delivery and sorting process and to allow the patrons’ return patterns to refresh each library’s collection.

Mending material and making replacement decisions are more efficiently done at Technical Services. Libraries should send all material to Technical Services for evaluation. If it should be mended, they can do the mending (rather than having mending supplies at every library location). When a replacement should be ordered, they can do so.

Group Five Recommendations: Policies and Procedures

The suggestions in this section are provided for the Library's consideration. Some of the recommendations could be implemented right away to provide some relief from issues associated with backlogs, storage space, and improving the spaces for walk-in customers.

1. Develop a collection philosophy that clearly addresses the needs of library users today as well as the role of Central and neighborhood library collections. Develop policies that support that philosophy.

As the role of Central and the neighborhood libraries changes, and as technology and online access changes how people find and use library resources, it is important to adjust the collection philosophy to the new environment. The current approach to collection development is based partly on older ideas about how users use the collection and what they want to use the library spaces for. For example, it may be less important to have the same core fiction titles in each neighborhood library as long as a core set is available to all the people (system-wide) who want a given title.

Access to the entire library system's collection combined with the convenience of placing holds on any item in the collection changes the rules about what needs to be on a library shelf. All libraries, MCL included, have had to gradually change their collection policies to suit the new needs of their library users who want convenient access to more material. However, "convenient" doesn't necessarily mean it must be on their local library shelf.

It may be just as convenient for customers to request the item online and be advised when it is ready (as happens now with the popular holds service). Or perhaps some customers would find it more convenient to use the mail service (which could be provided more cheaply than it is now or on some kind of limited but free basis....or perhaps people just don't know that it is a possibility).

MCL has tried to address the expanded expectations of their users by increasing the numbers of titles on the shelves, but this isn't necessarily the approach that best satisfies user needs.

Now is a good time to conduct a user needs assessment that helps clarify what users want from their local collections and the larger system collection, and what customers consider convenient.

2. Attack holds queues more aggressively

MCL has experimented with Holds Ratios (the number of holds placed for a title compared to the number of copies owned). The current policy is to purchase new copies of a title when the holds to copy ratio reaches 6 to 1 (changed in FY03 from 4 to 1). With additional storage available in the ASRS, the Library could return to a more aggressive holds to copy ratio and reduce the size of the waiting list for popular titles.

3. Establish browse-only “It’s Your Lucky Day” collections or titles

One of the ramifications of the current cycle of too much material and too little space is that the holds shelves grow and the browsable material space is reduced. In order to ensure that every customer who comes into a library can find something they are excited about, some library systems have set certain titles to browse-only status.²³

A browse-only collection can be established for “hot titles”²⁴ or new acquisitions, or authors in the news or popular genre.²⁵ The goal is to ensure that customers who prefer to come to the library rather than rely on the holds process always find a range of good choices. When the hold process is available to all material, it often has the effect of cleaning out the local libraries of the most popular titles. Setting aside new purchases or hot titles that cannot be put on hold ensures that both savvy catalog users and walk-in customers will be excited by what they find.

²³ The Central Management Team recommended this same idea to the Executive Team, calling the browse-only titles part of an “It’s Your Lucky Day” collection.

²⁴ Solano County established a “hot titles” collection for bestsellers and feature DVDs. See <http://www.solanolibary.com/about/template.cfm?id=2082> for more information. Pierce County instituted a special “Books Plus to Go” for first-come, first-serve discovery of some of the most in-demand items. See <http://www.libraryjournal.com/article/CA6400918.html?nid=3276> for more information.

²⁵ San Francisco Public Library established a First Stop Browsing Collection. See <http://sfpl.lib.ca.us/librarylocations/main/firststop.htm> for more information.

4. Expand training and support for library weeding efforts

The key to keeping space available on the shelves for the most desirable material is effective weeding. While the scheduled weeds are very valuable and much appreciated, these only occur every 16 months (the schedule is one library per month). While some libraries have established a strong weeding program, others stated that more frequent scheduled weeds would be useful.

In some cases, additional scheduled weeds are not necessary but additional *training* is required. The libraries that are able to generate their own weeding lists²⁶ are more likely to perform ongoing weeding tasks. Giving more people rights to the Create Lists feature of the ILS, as well as training in collection management concepts and the importance of weeding to collection health²⁷ will help increase the weeding activities in the libraries.²⁸

5. Establish Service Level Agreements between work groups

Service Level Agreements (SLAs) are useful internal documents between a service provider and a service recipient. It is a *commitment* that accurately and fairly reflects what one workgroup can provide to another and therefore what the recipient workgroup can count on.

²⁶ Staff at Central and 6 branches have Create Lists capability and run their own collection reports. This group was expanded this past summer. These locations have not needed help from Selections outside of the scheduled weeds.

²⁷ The Infopeople Project (CA) offered a one-day workshop entitled Weeding for Your Libraries Health (and the workshop material is freely available at <http://infopeople.org/training/past/2007/weeding/>).

²⁸ This is largely in the works already. The Collection Action Team has recently drafted a more thorough statement of MCL weeding policies and guidelines and the Selections Office is now working on their draft

One of the benefits of establishing SLAs is the process required to create them. It requires communication between the working groups. For example, an Interlibrary Delivery Service Level Agreement between the delivery department and the libraries receiving delivery requires the libraries to share enough information about their operational needs so that the delivery team understands what is important for the libraries (in terms of delivery) and where there is flexibility. The delivery team in turn shares what capabilities it has and where there is flexibility for them. The two workgroups establish a clear understanding of what each needs, what each can do, and what is most important. The resulting SLA then documents the responsibilities and expectations of both parties, as well as support and escalation procedures.²⁹

At MCL, there are interfaces between working groups that would benefit from closer communication and a better understanding of what each needs and what each can reasonably do. Going through the process of developing SLAs is just one way to establish communication and set expectations between workgroups.

To implement many of the changes recommended here will require significant organizational changes which require strong communication throughout the organization. SLAs become the deliverable that ensures the necessary communication occurs. To work effectively, Library leadership must guide the process and infuse the resulting documents with meaning and authority.

Group Six Recommendations: Expand Self-service Options

In the fall of 2001, the library began a campaign to increase the use of self check machines. Soon after, a series of events occurred (unrelated to the self check-out promotion) that resulted in the release of many recently hired clerks and pages who were still on probation. As a result, many people in the Library still associate self check with loss of jobs and use of the self check-out machines was not strongly encouraged by staff.

²⁹ For a larger discussion about SLAs and how they can be used in libraries, see the blog entry "Using Service Level Agreements Takes the Guesswork out of IT Support" at <http://www.galecia.com/weblog/mt/archives/000226.php>.

This perception doesn't match the experience of most libraries. Many libraries have found that even as they move aggressively to more self-service options, it rarely results in staffing reductions. Instead, most libraries find that more self-service options (check-in, check-out, fines and fees payment) help them keep up with the increases in circulation while their staffing levels remain relatively flat. The general consensus is that self-service implementations slow the rate that new staff are hired (as library use continues to grow) but more self-service doesn't necessarily result in staff reductions. Instead, new responsibilities can be taken on by existing staff who are no longer overwhelmed with their materials handling and circulation related tasks. Library jobs become more interesting than they were before self-service.

In 2005, self check-out was dealt another serious blow when concern over the loss of DVDs and CDs forced the Library to quickly implement a solution to protect these materials. The only option that was readily available to MCL was to separate the media from the cases for DVDs. CD and DVD holds are also held behind circulation desks. This solution is labor-intensive for staff that became responsible for maintaining two shelving systems (cases shelved in public, and media shelved behind the circulation desk). The policy also discouraged self check use because customers had to get the media from circulation staff. Once at the circulation desk, few people then opt to go to the self check-out machine.

Today, fewer than 20% of the check-outs performed in the neighborhood libraries are done at self check machines. At Central, the percentage is a little better at 34%.

It is important to recognize that it doesn't just benefit library staff, but consumers actually prefer having self-service options³⁰. The pervasiveness of self-service holds, accounts management, and self check-out machines is partly in response to materials handling demands but the speed at which libraries have adopted self-service models is largely driven by consumer demand. Libraries find that the more self-sufficient customers can be, the more likely they are to use the library services.

³⁰ Business Wire. (2007, June 21). NCR Study Shows Consumers are Driving Self-Service." Available from http://findarticles.com/p/articles/mi_m0EIN/is_2007_June_21/ai_n27282243

Self check-out systems caught on in the 1990's and MCL was among the early adopters. The library still uses the first and second generation self check-out machines (3M SelfCheck System Model 6210 and 7210). The first and second generation self check-out machines were large and not very user friendly. Over time, the machines have improved and gotten smaller. Today, self check machines are attractive, sleek, and multi-functional. Not only can they be used for check-out but many also allow for renewals and fines payment, or can be used for both check-in and check-out

Since those first 3M self check-out machines debuted, libraries around the country have learned more about what it takes to successfully implement self check-out. Today, it is not uncommon for libraries to have 85% of their check-outs performed at the self check-out machines. Some libraries have achieved 100% self check-out. However, to achieve such high self check-out rates, these libraries have had to make many changes including training customers, changing staffing models, ensuring that all library material can be checked out at the machines, promoting the use of self check, positioning the machines conveniently for the customer, and ensuring the systems are easy and comfortable for all customers to use.

The MCL 2009 budget includes Program 80022 – Protecting Central Library's Collection. This program calls for replacing the second generation self check-out machines found at Central and installing a theft detection system. Theft detection systems are composed of security gates at all library exits which read tags (or strips) installed in library material. The gates sound an alert if an item that has not been properly checked out passes through.

Adding security gates at Central has system-wide ramifications. Because material flows between Central and all the library branches, every item in the collection (not just items held by Central) will need to be secured in order to be effective. The self check-out machines to be purchased must match the type of security selected (magnetic security strips or RFID tags).

Program 80022 which calls for replacing the old self check-out machines with state-of-the-art systems provides an opportunity for the Library to begin moving forward in some areas that it has lagged behind. The recommendations in this section provide recommendations related to the Program and also provide suggestions for a way that MCL can offer more self-service options for customers, use technology to reduce clerical tasks, and reduce the clerical and materials handling demands overwhelming staff so they can spend more time helping customers use library resources and improving library programs.

1. Move to RFID as part of planned Central security and self check project

While the automated sorter described in this document could be implemented with either RFID or bar codes, since MCL plans to install a security system at Central which requires installing a security tag or strip in all MCL material, it is recommended that MCL choose RFID.

RFID tags have proven to be an efficient and powerful technology for identifying library material and storing data that can be used in materials handling operations including circulation, inventory and sorting (e.g. bar code number and possibly other information such as owning library and next location).

RFID makes self check-out and self check-in systems easier for customers and staff to use because the tag doesn't have to be visible to be read. Items just need to be within 18 inches of a reader for check-in and check-out. Another big benefit to RFID over bar code in circulation functions is that multiple items can be read at once. RFID makes inventory tracking much more manageable and RFID-based automated sorting is more accurate.³¹

In addition to the circulation and materials handling functions that RFID supports, RFID tags also provide security of materials. Unlike bar codes that are only useful for identification of the items, RFID tags identify the items and secure them. During the check-out process, the tag is updated so that the item will not set off the security gate alarms. No magnetic strips are needed. Moving to RFID, as part of the self check/security project at Central, positions the library for streamlined materials handling and circulation processing system-wide.

³¹ A bar code based sorter requires the operator to place material with the bar code facing up so that the electronic eye can read the bar code. If the item is placed upside down on the conveyor, the item is sent to an exceptions bin where it must be re-inducted. Smudged or damaged bar codes may also be sent to the exceptions bin. RFID tags, in contrast, do not require a line of sight so items can be placed on the conveyor in any direction, and the location of the bar code does not matter. Either way, the system reads the unique identifier of the item (either on the bar code or the RFID tag) and then looks up the status of the item in the ILS using SIP2 messaging.

2. Make sure RFID contract guarantees tags will work with forthcoming NISO data model standard

RFID use in libraries has been steadily growing. As a result, the tag costs have come down (standard tags currently run under 40 cents each). However, the standards that ensure interoperability between vendors are still not finalized in the United States. NISO has provided a set of recommendations for RFID use in U.S. Libraries³² which should be followed with any library RFID implementation. In addition, the RFID purchase contract should include a guarantee that all tags provided will be compliant with the forthcoming NISO or ISO data model standard within one year of its adoption without requiring the Library to replace the tags.³³

3. Roll-out theft detection at all libraries and return to shelving media on publicly browsable shelves

As long as the staff at circulation desks have to manually match media to the cases when customers check-out, the percentage of check-outs occurring on self check machines will remain low. Once RFID tags are installed in all library material, security gates should be installed at all libraries so that the gates can provide the necessary media security required. Media can then be returned to their cases and shelved in public areas without requiring two shelving systems (for media and for cases) and without requiring staff to match the case to the media for check-outs and check-ins.

Allowing the security gates to provide the security (instead of the labor intensive procedure now in place) will save circulation staff time that would be much better spent getting material back on the shelves. It will also save staff workspace and encourage more users to check material out using the self check machines.

4. Replace self check-out machines in community libraries with state-of-the-art RFID based system

Once all material is RFID tagged and security gates are in place, the Library should work toward replacing all the current self check-out machines with easier to use, attractive, compact systems. Customers will be impressed with how easy the new systems are to use and will be delighted that they can check-out several items at a time.

³² Available from the RFID for Library Applications NISO Working Group. See http://www.niso.org/apps/group_public/download.php/116/RP-6-2008.pdf.

³³ Both 3M and Envisionware have signed RFID contracts with library customers that contain this language.

By placing self check-out machines near the hold shelves and positioning the hold shelves near the door, libraries can make it much more convenient for customers to pick up their holds. These customers in particular will appreciate how quick and easy it is to get in and get out without having to stand in line or have staff check them out.

The move to an RFID-based self check-out and security system will also allow the libraries to re-allocate staff and move to staffing models that make more sense for today's library users. Customers want to do their own check-outs, pay their own fines, find items on the shelves and find ready reference questions using Google. They also want help from library staff. But when library staff are too busy sorting material, processing holds and checking out DVDs, they don't have time to provide the kind of help that customers really want (e.g. supporting public computer users, helping kids with homework, planning and running programs, helping people with research).

5. Install self check-in machines at select locations

The next self-service option that should be on the MCL long-range plan is self check-in. Automated self check-in systems can be installed next to or in place of traditional bookdrops. They can be installed outside or inside the library. Customers like them because they can return material before coming inside and then enter the library with no worries about hitting borrowing limits. Unlike returns placed in the bookdrop, there is no delay of hours (or even a day) for items to get taken off a customer account. Items returned to the self check-in system are immediately removed from the customer account so they can again borrow up to their limit. Patrons can also get a receipt for their returns.

Self check-in machines are a big benefit for staff as well because they are usually paired with a small sorter. As items are checked in, they are separated into three or more categories. Items that can be returned to the shelves go into one sort location, items that trigger a hold for a patron request go to another sort location and items that need to be sent out through the delivery system go to another sort location. Items that are checked in and ready to be shelved need not be scanned by a staff person. They can be immediately returned to the library shelves because the automated check-in system does the work of checking in the items and updating the status in the ILS.

Automated check-in systems completely eliminate the repetitive motion of scanning each returned item from circulation staff workflow and greatly decreases the return-to-shelf time of customer returns.

Libraries that would benefit most from self check-in units are Central, Gresham, Midland, and Hollywood. Each of these libraries has high volume and enough space to put in a 9 to 11 bin sorter with at least one external return and one internal return. This would allow material to be checked in and sorted immediately, even while the library was closed. Returns would be rough sorted so that pages could begin reshelving immediately after starting their shift. They would no longer have to begin their day moving bins around and scanning everything that was returned after closing. Holds would each go to dedicated bins so that staff could get them labeled and up on the shelves immediately (many libraries have the holds label print out automatically when holds are triggered during the return, so it would simply be a matter of matching holds labels with the items in a bin).

Depending on how good each library is about keeping up with reshelving, sorters can be configured with book cart chutes, which allow the sorted material to be placed directly on a book cart instead of into a bin. This takes one more step out of the workflow by eliminating the need to move items from the sorter bins to a shelving cart. Instead, the sorter rough sorts (e.g. all adult fiction goes to one sort location) directly to a book cart so that pages can remove the cart from the sorter and take it to the shelves for shelving.

Other libraries that would benefit from an automated check-in system if the spaces could be reconfigured to make them fit are: Belmont, Capitol Hill, Gregory Heights, Holgate, North Portland, and St. Johns. However, without at least a three bin sorter to feed the returns into, the automated check-in systems lose much of their value because material must be scanned by staff to determine its status. To be of maximum value (and to justify the expense), each of these libraries would need to be able to find a way to fit in the self check units (either internal or external or both) and a three bin sorter (which requires at least a 6' by 8' area inside the library.)

6. Replace circulation and reference desks with single points of service wherever possible

Most of the MCL libraries have both a circulation desk and a reference desk. Clerks work at the circulation desk where they help customers with their accounts, answer phones, get the media from behind the desk for DVDs and CDs on hold, and check-out material. The reference desks are staffed by library assistants or librarians and they provide a number of services from true reference to public computer support to readers' advisory. Reference staff do much of their program planning and administrative work while at the desk.

It is becoming more common to use a single service desk instead of separate reference and circulation desks. The service desk then becomes the place where all issues can be resolved for customers whether it pertains to circulation, their account, or some other kind of question typically answered by a reference librarian.

Many single service desks are staffed by a clerk as well as a reference librarian. Another approach is to staff the desk with clerks and use on-call reference³⁴ or roving reference³⁵ services. Some libraries encourage staff working out on the floor shelving or shelf reading to assist customers at their point of need. Other libraries are adding Greeter positions or “InfoStations”³⁶ that help customers with basic informational issues and ensure they know where to go to get the help they need. The Public Library of Charlotte and Mecklenburg County implemented a Unified Services in which a defined set of core services would be offered at every service point.³⁷ The focus of these new service models is to eliminate the confusion for the customer and bring the help to them, rather than making them deduce which desk or person is the right one for their questions.

³⁴ On-call reference refers to the model in which the trained professionals providing reference services are allowed to work in the backrooms (which are optimized for their efficient use) but can be called out when a true reference or research question comes up. This sometimes involves expanding the role of the clerks to handle more questions (informational as well as transactional) than they sometimes do.

³⁵ Roving reference involves the reference librarian moving around the library and engaging customers at their point of need. Roving reference librarians must be trained to recognize when customers need help (and when they don't) and how to approach them without intruding. This model is often accompanied by some kind of paging capability that allows service desk personnel to bring the reference librarian to the service desk (or wherever the customer is that is asking for reference assistance).

³⁶ See Cerritos Library Fact Sheet including a description of their InfoStations at http://www.ci.cerritos.ca.us/library/fact_sheet.html.

³⁷ See their staff blog for more information: <http://blogs.plcmc.org/category/unified-services/>

Costs and Benefits

The costs associated with the recommendations include the cost of equipment at the service center (sort staff and automated sort operation, delivery, off-site storage and Technical Services) including the automated sorter, storage rack, Warehouse Control System (software), and the automated storage and retrieval system. Budgetary pricing, annual maintenance and staffing requirements for the system are provided below. Because all Sort Center and Delivery staff will be absorbed into the recommended operation, the “additional staffing requirement” represents the additional staff (beyond current sort and delivery staff) that will be required.

The cost of the library sorters recommended for the three regional libraries and Central is also provided (budgetary pricing, annual maintenance and staffing requirements.) Similar information is provided for the small, 3-bin sorter with automated check-in but these numbers are provided only for the Library’s reference as they are not recommended at this time.

The service center will need to be housed in a large facility at least 30,000 square feet in size (with a 30 foot ceiling) and easy access for delivery trucks. No pricing has been provided for such a facility.

Other costs that come into play involve the cost of purchasing the bookdrops and adding trucks and drivers to handle the additional work of incorporating the bookdrops into a route and increasing the number of deliveries to each location. Cost of bookdrops, cost of trucks, and staffing requirements for this aspect of the recommendations are also provided below.

If there is a charge for placing bookdrops at location, these costs are not represented here.

The benefits are broken down into three categories: benefits to library staff, additional benefits to Central Library, and benefits to MCL customers.

Costs

There are five groups of costs associated with the recommendations provided: appropriate space for the service facility, equipment and staff for the service facility, library sorters, bookdrops, and the additional delivery staff and trucks. Costs for service center space have not been included. The minimum size of the service facility space that would be required is approximately 30,000 square feet. This would accommodate the equipment and staff needed for the service facility (130' long by 110' wide x 30' tall) while leaving extra space for Technical Services.

Equipment and Staff for Service Facility

The functional requirements of the sorter and off-site storage system have been described earlier. The cost estimates provided here have been provided by FKI Logistex based on the system described in this document³⁸.

Total Budgetary Cost: \$4.25 Million (facility costs not included)

Staffing: 10 FTE required to operate the system (5 additional FTE plus Sort Center Staff of 5)

Annual Maintenance: \$100,000

Operating Schedule: Seven days a week, 8 hours a day

Budgetary costs of the individual components of the system:

- Automated Sorter: \$1.5 million
 - 100 sort locations configured with MCL crates at each discharge
 - take away conveyor for moving crates to delivery and ASRS system
 - communication with ILS and WCS
 - high speed, recirculating design with 4-6 manual induction stations
 - FTE Required: 8

³⁸ One feature has been added to the system and this feature is not included in the budgetary pricing estimate provided by FKI. The ability to recall an entire crate (versus just an item through the ILS) may require additional programming that has not been accounting for in these numbers.

- 4 Induction staff (page)
 - 2 Chute staff (clerk)
 - 2 Supervisors
 - Additional FTE Required: 3
 - Using current Sort Center staff, only 2 additional page level positions and a second supervisor level position will be needed
- Warehouse Control System (WCS): \$250,000
 - Coordinates movement of crates to sorter and ASRS system
 - Coordinates movement of crates to delivery
 - Communicates with ILS and ASRS system
 - No additional FTE required (Supervisors will manage the WCS)
- ASRS system: \$2.5 million
 - rack system configured to hold almost 300,000 items in MCL crates
 - three cranes to handle 100% of daily delivery requirements and the ability to pull up to 500,000 items per year from off-site storage
 - Keeps track of location of all items in containers and container location
 - Additional FTE Required: 2
 - 2 Pickers/Induction Staff (page)

Library Sorters

Library sorters have been recommended at three regional libraries (Gresham, Midland, and Hollywood) and at Central. For planning purposes, the cost of small, three-bin sorters with self check-in units are provided. Installing the smaller systems would require some remodeling work at the neighborhood libraries.

Total Budgetary Cost: \$1.5 Million

Staffing: No additional staffing required

Annual Maintenance: \$100,000

Budgetary costs of the individual library sorters:

- Self Check-in and Sorter (suitable for regional libraries)
 - 11 bin sorter with staff induction
 - one internal and one external check-in unit
 - 22 trolleys (or bins)
 - Includes parts, hotline assistance and inspections
 - Capital Cost: \$375,000
 - Annual Maintenance: \$25,000
 - No additional staffing required

- Self check-in and sorter for neighborhood libraries (as possible)
 - 3 bin sorter (no staff induction)
 - one external check-in unit:
 - 3 trolleys (or bins)
 - Budgetary Price: \$160,000
 - Annual maintenance \$18,000
 - No additional staffing required

Bookdrops

Bookdrop pricing is based on advertised pricing from Kingsley.com. Six outdoor bookdrops are recommended for placement along busy routes. The goal of the bookdrops is to reduce the volume of material being returned at smaller “drop off” libraries (especially Albina and Belmont)

Total Budgetary Cost: \$21,000

Budgetary costs of the individual components:

- Outdoor Book Return
 - 500 book or 1250 DVD capacity
 - Height appropriate for walk-up or drive-up use
 - Budgetary cost: \$3500 (each)

- Six book returns are budgeted
- Additional FTE Required: see next section

Additional Delivery Staff and Trucks

Depending on how many bookdrops are placed around town, it may be necessary to add more than one driver and truck to handle the volume. However, as envisioned, there will be six bookdrops which can easily be handled by a single route.

Another driver and truck has also been added to allow for more frequent deliveries to each of the libraries which will result in less material being dropped off at the libraries at a time.

Total Budgetary Cost: \$120,000

Staffing: 2 FTE

Annual Maintenance: \$10,000

Budgetary costs of the individual components:

- Truck: \$60,000 each
- Annual Maintenance: \$5,000
- Additional FTE Required: 2

Summary of Costs

The total capital costs for the system described in the recommendations comes to \$5,891,000 and will cost approximately \$210,000 annually. An additional 6 FTE (5 at service facility and 2 additional drivers) will be required to operate the system as described.

Table 4: Summary of Costs

TOTAL COSTS	Capital Cost	Annual Maintenance	Additional FTE
Sorter and Off-site Storage	\$4,250,000	\$100,000	5
Service Facility	Not Specified	Not Specified	0
Library sorters for three regional libraries and Central	\$1,500,000	\$ 100,000	0
Six bookdrops	\$ 21,000	n/a	0
Two additional trucks	\$ 120,000	\$ 10,000	2
TOTAL	\$5,891,000	\$210,000	8

Benefits to Library Staff

The recommendations will benefit staff working in neighborhood and regional libraries by removing some of the work of processing material, providing staging of material outside of the libraries, controlling delivery volumes, reducing bookdrop volume, providing opportunities for optimizing backroom areas, and reducing the amount of repetitive work done by clerks and pages.

Automated sorter eliminates sorting of outgoing delivery and reduces space required to stage outgoing delivery

One way that space and time will be saved is by eliminating the need to sort outgoing delivery at each library. Because all of the sorting will be automated (based on reading the items' bar code number or RFID tag), nothing needs to be sorted in the libraries. Instead, all material for another library (whether it is a return or a hold, whether it is for Central or another branch) can be placed in the same crate. This will result in fewer crates because each crate will be filled before a second crate is put in position. There should be no more partial crates moving through the system. In addition, fewer open crates will need to be spread around the backroom for sorting into (currently each library sorts to at least 5 open crates, and often more).

Libraries receive rough sorted delivery that can be checked in at the crate level which reduces processing time and helps relieve pressure in backrooms

With automated sorting, the sorter is able to keep track of each item that is placed in each crate so that it can build a manifest associated with the crate. At the receiving library, the staff person scans the bar code on the crate to update the status of all the items in that crate (e.g. "In Transit" status is changed to "Being Shelved" and hold notices are automatically sent out).

Crate check-in saves approximately 40 manual scans per crate which will result in quicker processing time for delivery material. Each day's delivery will be checked in and ready for shelving in a fraction of the time it currently requires and fewer people will be tasked with doing the check-in work. As a result, more staff can be involved in shelving material and eliminating the crates that take up much-needed workspace. If delivery schedules and staffing can be coordinated, it may even be possible to have all delivery material checked in and shelved before opening the doors to the public.

In addition to crate check-in which will be provided for every library, it is also possible to provide additional pre-sorted crates. Each library will likely want to receive crates dedicated to holds, returns and media at the very least. The 100-sort location sorter is recommended in order to provide the option to add several additional dedicated sort options at each library. For example, some libraries may want to keep adult returns separate from children's returns. Pre-sorted crates could then be taken directly to the children's section (or adult sections) for shelving. This is another way to leverage the sorting system to reduce the problem of too little workspace in the backrooms.

Material being delivered to fill hold requests will be sorted to pre-sorted crates. When the hold crate is checked in at the receiving library, it will check-in all the holds (and the notice will be sent to each customer notifying them of the availability of their requested item) as well as communicate with a printer (as they do now) to generate the holds slips. The pre-sorted crates and hold slips can be taken directly to the holds shelf for shelving so they will be available by the time the customer arrives. Again, this reduces the time crates spend taking up space in the backroom.

Having reduced the time required for receiving delivery by at least 3 minutes per crate³⁹, staff can spend more time keeping up with shelving, processing bookdrop, and working directly with customers. All delivery and bookdrop items will be back on the shelves more quickly so that fewer crates are clogging up operations in the backrooms. The additional workspace will allow staff to set up their work areas much more efficiently.

³⁹ Each crate now takes approximately 4 minutes to process (each crate contains 40 items and each item takes 6 seconds to process including taking the item out of the crate, scanning it and placing it on a sorting cart). With crate check-in, it will take only a couple seconds to scan the crate to process all 40 items inside. Then the crate can be rough sorted to shelving carts as it is now or it can be taken out to the public areas as part of the fine sort to shelf process. Which process is more efficient may have to be experimented with library-by-library because it will partly depend on how much pre-sorting is done at the central sort facility (and whether the receiving library has its own sorter).

Bookdrop volume is reduced as a result of new bookdrops along prime commuter routes

All of the libraries receive returns via their external bookdrops 24 hours a day. The design of the bookdrops make it easy for customers to return material (e.g. they are low enough to use from outside the building) but they are not optimized for retrieval of the returns (the inside height of bookdrops is *always* lower than is ideal) nor are the bins into which the material is dropped adequate for the volume returned. During holidays, most libraries remove the bookdrop bins because they overflow and jam the bookdrop chute. Instead of letting items fall into a bin that can be transported to the backroom for processing, the staff lets the items fall onto the floor where they can accumulate without jamming the bookdrop and inconveniencing the library customer. Picking up a large stack of returned material off the floor is ergonomically undesirable and it slows down the process of checking in all the items.

Bookdrop volume is a problem even when the library is open. Most libraries reported that someone empties the bookdrop every 45 minutes, and sometimes even more frequently. This is done to ensure that material is promptly checked in and also to ensure the bookdrops (interior and exterior) do not jam.

Some libraries, including Belmont and Albina, are on very popular transportation routes and receive a disproportionate amount of returned material. Much of this material doesn't belong at their library. Since both libraries are very small, the additional volume is very difficult for staff to absorb.

Adding bookdrops along busy routes will ensure that customers continue to have a convenient way to return material without creating problems for the libraries located in these areas. However, for the added bookdrops to work effectively, the items must be picked up and checked in each day. Without getting the items checked in immediately, library customers will not want to use them. Therefore, the delivery routes must be modified to include the added bookdrops. These items must be picked up daily and checked in as they are fed into the automated sorter.

Automated self check-in systems with sorters reduce processing time associated with bookdrop and free up work space in the backrooms

Self check-in machines with even a small sorter take several steps out of the processing workflow and relieve staff of the repetitive motions associated with checking in bookdrop material. The system checks in the items and rough sorts material either to a bin or possibly even to book carts that can be used for shelving.

Staff dedicated to checking in bookdrop can be redeployed to shelving material which will ensure that the limited back office spaces are used for working rather than staging material in crates and on book carts waiting to be checked in.

Even the larger sorters (recommended for Central, Hollywood, Midland, and Gresham) take up less space than the space currently taken up with book carts waiting to be shelved and the numerous shelving carts parked around check-in stations. Once spaces are reconfigured to accommodate the sorters, the library will be able to keep up with bookdrop returns so that growing numbers of parked book carts no longer clutter the back office after the weekends and holidays (and other busy periods). All library staff will benefit from the additional work space that will be available for use.

Off-site storage system provides temporary storage for libraries and provides easy recall capability

The off-site storage system must be large enough to accommodate some storage capability for the entire library system as well as for individual libraries. Many libraries currently stash out-of-season material in their backrooms. With the proposed system, these items could be sent to their own off-site storage area without removing them from their own collection. Each library should also be given some discretion in having its own “just-in-time” collection. For example, extra copies of items the library knows will be needed for an annual school project or which regularly appear on their “staff picks” lists could be kept there, or book club material, or certain low-circulating items.

The details of how an individual library is expected to use their off-site storage space will need to be developed system-wide so as not to conflict with the system-wide off-site storage function of the system.

More frequent deliveries make each delivery easier to manage

Adding more frequent stops of interlibrary deliveries helps even out the flow of material at each library. Rather than having 50 crates to work around, each library will receive fewer crates with each delivery and will have fewer outgoing crates taking up space. The library workspaces are generally too small for the number of people working in the library even before staged crates are added to the space demands (with some exceptions). Reducing the volume of material staged by increasing the deliveries helps ensure that each library can operate efficiently.

Off-site storage system helps regulate delivery

The off-site storage system can be used system-wide for staging material when delivery volumes exceed the space available in individual libraries. Currently, publishing cycles, holiday closures and other seasonal variations result in some very large batches of material arriving in the libraries regardless of the individual library's readiness to receive it. Being able to stage this material in the storage system for delivery on a more graduated schedule would eliminate many of the backlogs that result when a library gets inundated with more crates than they can comfortably fit in their backrooms. Efficiency inevitably suffers when too much material is stored in the backrooms and this worsens the situation.

Libraries can redesign backrooms for efficiency when fewer crates need to be staged there

With fewer crates being staged in the backrooms, the libraries can redesign their work areas for more efficient operation. Many of the backrooms now include large areas set aside for more crates than will be necessary with the new system. Personal work spaces and bookdrop processing areas have suffered as a result of workers competing for the little bit of space that is left behind.

Some libraries have done an excellent job of segmenting their back office spaces and ensuring that shelving carts can be shared by people checking in material and that the shelving carts are within easy reach of the processors. With better promulgation of best practices, these sorts of efforts would be duplicated system-wide.

Snags, unwanted shared collection items, and mends all go into delivery instead of using up branch library space and staff time

In addition to the interlibrary delivery items, it is recommended that all snags, weeded items and items for mending also go out with the day's delivery for further evaluation and processing by Technical Services staff. Items from the shared collection that are unwanted or which do not fit into a library would also go to the service center for evaluation or distribution to a different location. Removing these items from the libraries will clear another 8-10 linear feet of shelving (in the backrooms) and save some shelving space in the public shelves (for unwanted shared collection items). Eliminating the work of matching pieces of snags (except perhaps the initial inquiry to the last borrower of the item) will save time of the library staff which again results in more time for shelving and customer-facing work.

Expanding self-service (check-out and check-in) and eliminating the media from behind the desk options expands role of library clerks and provides more opportunities for positive interactions with customers

MCL clerks face a crushing amount of materials handling related work. Clerks are primarily responsible for manually checking in delivery and bookdrop material, checking out customers at the circulation desk, and dealing with holds (processing incoming holds, labeling them, and removing expired holds and processing them for delivery). Given the volume of material moving in and out of each library, clerks have little time for work that might be more satisfying (e.g. greeting customers and providing informational assistance, assisting customers using the public computers, helping with library programs, roving, or assisting reference or administrative staff).

Part of the work of the clerk is to help customers with their accounts (e.g. issue new library cards, help with fine and fee payment) and give customers the media for their “on hold” DVDs and CDs. However, even though these tasks involve direct customer contact, they are often rushed as the clerk works to reduce the line of people waiting to check-in while facing the stack of crates waiting to be checked in.

By automating many of the tasks now handled by clerks, the library creates an opportunity for expanding the tasks performed by clerks and reducing the stress level of their work. Between the crate check-in, pre-sorted material provided by delivery, using RFID to secure the media, and the expanded use of self check-out machines, the clerk role can be modified to include a much broader range of tasks that are likely to be more satisfying, less stressful, and less physically and ergonomically difficult than the work being asked of clerks today.

For self-service to work, it is important that all aspects of the library operation support it. For example, if self check-out machines are to be used successfully, it is important that all material can be processed easily at the self check machines. It does not benefit customers or library clerks if customers get part way through their self check-out process only to find that they can't check-out one or two items. This results in a high ratio of frustrated customers going to the circulation desk to finish their transactions.

To some extent, this is the situation that the library is in right now with the self check-out machines. Many items cannot be read at the self check-out machines but the customer doesn't know this until they are well into their transaction. Similarly, some items from the Central stacks do not have bar codes so cannot be checked out using the self-service machines. Plus, the obvious problem of having to get media at the circulation desk makes it unlikely that many transactions will succeed from beginning to end. The result is that those customers who do try to use the machines end up frustrated at the circulation desk. To be a successful self check-in implementation, policy changes (e.g. make it possible use self check-out for all media, make sure every item in the collection has a bar code or RFID tag, provide training and support for customers) will need to be made to support the new self-service model.

Reducing the space occupied by two service desks (circulation and reference) and moving to single point of service can result in optimized workspaces, and opens up more space in the public areas

A single service desk eliminates the space being taken up by large circulation and reference desks leaving more room in the public areas for customers or material. During a public service shift both reference and circulation staff spend more time on the floor interacting directly with patrons. Desk work would then be moved to the backroom areas where staff could work more efficiently without being disturbed. However, this may be difficult at MCL because the workrooms are so small. But as the large number of crates is reduced through more efficient processing, it may be possible to start moving in the direction of reducing the size of the desks on the floor while making it easier for customers to find help, and optimizing work areas in the backroom.

New service models provide opportunities for volunteers to contribute in new ways

As the library moves away from the traditional reference desk/circulation desk model and experiments with single points of service and/or roving service representatives and/or greeters, they will find new opportunities for volunteers. Many volunteers prefer work that involves direct customer contact and roving while shelving books or staffing a greeter desk are excellent ways to make use of the volunteers eager to remain involved in MCL operations but who find the work of materials handling difficult or unenjoyable.

Additional Benefits to Central Library

In addition to the benefits discussed above which accrue to all library staff, there are also additional benefits for the Central Library as it struggles to function in its multi-faceted roles. Customers use Central differently than they did a few years ago. Now, more and more people are requesting items from the Central collection but they are picking them up at the neighborhood and regional libraries.

While the other libraries serve a suburban population, Central's local population is urban. Urban libraries face different challenges related to security and have higher demands on their public access computers. The browsing collection is used but the characteristics of the collection must meet a much broader range of interests and information needs.

In addition, with the closed stacks available in the basement, plus the government and historical records available on browsing shelves, the Central Library serves many of the functions of a research library and government repository.

Off-site storage system reduces some of the workload for Central and Stacks staff

Some of the pressure faced by Central can be alleviated by putting some of its browsable material into the off-site storage system where items can be more easily pulled to fill branch requests. Storing items in the off-site system will reduce the workload for Central, and save space on Central shelves.

Because of the trend away from Central as a materials pick-up location, Central staff commit many hours to pulling material in response to requests from branch libraries. The layout of the collection throughout the building including the fact that material is distributed over three floors (plus two basement floors) and in several different rooms makes pulling items and shelving material a very staff intensive process.

Each of the last two years, Central has filled over 400,000 hold requests (approximately 750 items per day). Filling each hold includes not only finding the item and sending it out via delivery but also reshelving it when it is returned. Because of the layout of the Central Library, this is very labor intensive. As many as 16 people spend 10-15 hours pulling 800 – 1,000 items per day. Five pages then spend another hour each (at least) to pack the pulled items into crates. The Stacks department also commits resources to pulling items to fill hold requests.

While some staff in the neighborhood libraries have the impression that items requested from Central have a much longer turnaround time than material requested from other libraries, it is probably not true. It may have been true years ago but the current procedures in place at Central ensure that items are pulled and ready for outgoing delivery the same day. Central staff also sort their own items so all items are pre-sorted for each branch. Delivery staff pick up the pre-sorted crates and deliver them on the same or next delivery day to community libraries.

With some of the Central collection in off-site storage, the number of holds needing to be pulled by Central and Stacks staff will be reduced and the process is more efficient when implemented with an ASRS.⁴⁰ Instead of walking around the library or through the stacks with a book cart locating the items on the shelf, the ASRS system brings the crate containing the requested item to the operator who pulls out the requested item(s) and sends them to the sorter (via conveyor) to the delivery system. And, the items will always be where they should be (because they've been placed there by the ASRS system itself).

Stacks staff estimate that a list of 50 items takes approximately 75 minutes to pull, scan and crate (90 seconds per item). With ASRS system, each crate takes approximately 2 minutes to extract from the rack. With three cranes, a minimum of three items can be pulled at a time (40 seconds per item plus the time it takes to pull the item(s) out of the crate and set it on the conveyor). The more items in the same crate, the faster this process will be.

With an automated sorter at Central, the pulled items can be sent to the service center for sorting or they could be inducted into the sorter for sorting to crates. If the Central sorter is to be used for both rough sorting returns as well as sorting outgoing delivery, a larger sorter (than the 9-11 bin version recommended) will be necessary.

⁴⁰ Chicago State University implemented an ASRS system that was located in a warehouse connected to the library. They reported that retrieval time was reduced from 30 minutes (the length of time it took some students to find material on the shelves) to three minutes for the ASRS system to deliver the item to the circulation desk (see <http://articles.latimes.com/2007/apr/22/nation/na-robots22>). The more commonly reported retrieval time is 15 minutes per item (however, more than one item can be retrieved simultaneously).

The Central Library's physical spaces can be repurposed to address the needs of Central Library customers

The most popular part of the Central Library (the Popular Library and the Children's Library on the first floor) is also the smallest part of the library. The largest part of the library (the Humanities Library on the third floor) is the least used part of the library. Some percentage of the Central Library collection (perhaps as much as half) does not need to be stored on publicly browsable shelves at Central; however, the material is valuable and should not be discarded.

Moving a large percentage of the Central Library collection to the off-site storage system would create an opportunity for the Central Library to reconfigure the spaces to accommodate the current needs of Central Library customers. Central staff report that more room is needed for library programming. A quiet study area (click-free zone) and a computer lab are also needed. These are all standard features of any urban library being built today. Most libraries also include dedicated Teen areas separate from the children's area where gaming and social activities can take place.

As long as the Central Library bears the burden of storing so much of the low-circulating MCL collection, it will be unable to develop the physical spaces needed to satisfy today's public library users (especially urban users).

Off-site storage will allow Central to increase the number of popular items in the collection

Moving some of the low circulating items to off-site storage from other parts of the library would allow Central to grow its most popular collection. The size of the popular collection is now restricted by other collections, the fact that the popular collection should remain on the first floor, and the large amount of space that also is dedicated to holds, public computers, and CD/DVD pick-up.

Benefits to MCL Customers

The recommendations included here provide benefits to library users by ensuring that material turnaround is quicker, available holds are ready within 24 hours, the library shelves are easy to browse with displayed material that entices them, check-in and check-out is easy and convenient, and the library spaces can be used for a wider variety of activities.

Library can expand collection

With more room in off-site storage, the library's collection can grow. The current collection size (1.9 million items) is small considering the population being served. Based on collection size and population served, MCL has 2.8 volumes per capita versus 3.8 (on average) at comparable libraries.⁴¹

More likely to find items they want on the shelves

In eliminating the back logs of ready-to-shelve book carts and delivery crates, and getting material back on the shelves quickly, customers will more often find the items they are looking for. Most material should be back on the shelves within a few hours of being checked-in at the service center because of the frequent deliveries made to each library and the quick receiving process at each library. Material returned to bookdrops equipped with self check-in systems could be back on the shelves within hours if not minutes.

More ways to return material and quicker check-in

The additional bookdrops will (with guaranteed same day check-in) make it even easier for customers to use the library. Given the importance of convenience to customers today, conveniently located bookdrops will appeal to a wide range of patrons. Parents with kids in the car can return material without leaving the car. Commuters can easily return items as part of their daily commute. Bicyclists can use the bookdrops without having to lock-up their bikes.

Faster turnaround times for requested items

Customers don't understand why material listed as "available" can't be available to them (delivered to their desired pick-up location and "available" on the shelf) within 24 hours. The distance from one library to another is less than 25 miles. Their experience is that something can be ordered online from New York and delivered the next day so what can be so difficult about getting a book from one library to another.

⁴¹ Holdings per capita at comparable libraries based on 2007 Public Library Data Service Statistical Report (2007) and are as follows: Columbus Metro 3.0, Cuyahoga County 5.3, Hennepin County 2.5, Denver Public 4.3.

While it is true that libraries don't have the resources of most of those online companies, it is also true that libraries need to do a better job at meeting customer expectations. Providing next day service for items that are available at another location is achievable with the recommendations included here.

More "long tail" items available

One of the benefits of adding an off-site storage system like the one envisioned here is that the collection philosophy can be modified in such a way as to provide "long tail" items for customers. "Long tail" refers to the titles that may not have broad appeal but they are valuable nonetheless. The term was coined by Chris Anderson who argued that "products that are in low demand or have low sales volume can collectively make up a market share that rivals or exceeds the relatively few current bestsellers and blockbusters, if the store or distribution channel is large enough."⁴²

Libraries have the potential for contributing significantly to the long tail of books and other historical documents. When libraries are forced to weed material based primarily on low circulation, some of the niche titles one finds in the long tail get lost.

In particular at MCL, the limited amount of shelf space in the libraries combined with the enormous popularity of certain titles, has forced the library to weed potential long tail items to make room for the more popular items. The off-site storage system can be used to store low-circulating but valuable material so that when they are sought by library customers, the library can still provide them.

More personal attention from staff

Keeping up with material processing requires the full-time attention of pages, volunteers, and clerks. In addition, library assistants and librarians are often called in to handle the load. The result is less personal attention is available for library customers, and less programming is planned in the libraries.

Reducing the processing work done by staff in the libraries creates opportunities for greater involvement in the communities and with individual customers who come through the libraries. This is particularly important at a time when information is readily available and it is often the services, programming, and individual assistance that is most valued by walk-in customers.

⁴² Taken from Wikipedia's Long Tail entry available from http://en.wikipedia.org/wiki/The_Long_Tail

The Library can create physical spaces that support programs and activities people expect from today's public libraries by moving material off some library shelves while making access to all library material fast and convenient

Public libraries are much more than repositories of books and magazines. They are important community and civic places. They support a wide range of activities for people of all ages and with varied interests. While access to books, databases, electronic resources, computers, DVDs and other material is still important, it is no longer sufficient. As long as access to resources is quick and easy, it matters less and less where those resources are stored. In fact, in many cases, the format of the material is less and less important. The latest novel by a favorite author may be equally satisfying as a book, book-on-CD or downloadable audiobook.

The job of the library is to help the customer make the connection to the resource but the "how" is less pertinent to the customer. Library users expect fast turnaround and they have high expectations about what should be findable for them. And, in the meantime, they expect to be able to read quietly, pick up the latest Harry Potter, check their email, read the latest news from their home of origin, or play computer games with their schoolmates.

In other words, the demands on the staff and the physical spaces are high. In order to meet these challenges, new libraries are being built that are large, open spaces with less emphasis on the books. At MCL, where the spaces are small, it is important to ensure that the items on the community library shelves earn their keep in terms of circulation and their appeal to browsing patrons. Material that is less popular with walk-in customers but is a good addition to the collection might be a candidate for off-site storage.

Appendix: Findings

In order to provide a thorough evaluation of the situation at MCL, a wide range of information was examined including AA Memos (All Staff Administrative Memos) from 1999 to 2008; the strategic plan, various collection reports from 1999 to 2007 as well as collection analysis data; sort center statistics and reports as well as the sort center Six Sigma performance presentation material; holds reports; staffing data; weeding guidelines, and weeding reports and training material, MCL chronology from 1989 to 2006/7, budget reports, and circulation data and circulation policy documents.

In addition to reviewing a wide array of documentation, staff throughout the system were interviewed during the site visits to each of the library outlets. Each library site visit took approximately two hours and included a tour of the library (focusing on material handling practices). During the visits, location managers and supervisors involved in materials handling provided their thoughts and answered questions. Oftentimes, other staff (pages, clerks, librarians and library assistants) participated in the meetings to some extent. In many cases, additional reports and memos were provided by staff during these visits, and this material was also thoroughly reviewed.

In addition to the time spent at each library, four focus groups were held specifically for library staff (with no staff or managers from Library Administration in attendance). During this time, staff were encouraged to freely speak their opinions about matters related to the problems being addressed. In addition, some of the possible solutions to be proposed were shared and these were discussed as well.

All of the data and documentation provided has been thoroughly reviewed and the information provided by individuals has been considered. The result of this data collection effort was an initial "preliminary findings" document that was reviewed by appropriate library staff. The goal of the review was to identify inaccuracies and to help the consultant gauge some of the individual feedback received from individuals. In many cases, historical context was provided in the form of additional documentation or follow-up interviews were conducted by phone.

The findings provided below are a result of this thorough, though not necessarily comprehensive or scientific, process. None of the findings are intended to lay blame or harm any individuals or departments of the library. Instead, they are provided for the purpose of documenting the issues that have informed the recommendations provided in the first part of this report.

Physical Spaces and Equipment

Multnomah County Library (Library) is composed of a large Central Library, four regional libraries (Gresham, Hollywood, Hillsdale, and Midland) and 12 neighborhood libraries (Albina, Belmont, Capitol Hill, Fairview, Gregory Heights, Holgate, North Portland, Northwest, Rockwood, St. Johns, Sellwood-Moreland, and Woodstock). Each of the regional libraries has a capacity of 75,000 holdings and the neighborhood libraries can hold 20,000-30,000. Two new neighborhood libraries are being planned and each will have a capacity of 20,000.

The Library circulates a very high number of items per capita (28.3 on average) as compared to peer libraries which average only 19. However, the footprint of the library system is very small at .38 square feet per capita. Planning for Library Excellence⁴³, from the Library of Virginia, recommends a capacity of .6 square feet per capita.

Libraries are mostly comfortable and appealing for customers

Every library in the system provides a comfortable and appealing environment for their customers. Space is provided for working at tables, and computers are provided for public use. Each library has set aside areas for children with small tables and chairs and a large collection of children's material. The shelving is generally divided into a separate stacks space where high shelves are used and half height shelves are used in study, children and computer areas.

While it would be possible to replace the low shelves with higher shelves in order to fit more material into the space, the high shelves would detract significantly from the appealing spaces.

As with most libraries, the Library is attempting to keep up with the demand for public computers so each library has several sections of computers. Most libraries have separated the adult computers from the children's computers and also provided dedicated games computers for the children.

There are no dedicated computer labs (except at Central), Teen Centers, click-free (i.e. computer-free) zones or group study rooms at any of the libraries.

⁴³ Available from <http://www.lva.lib.va.us/whatwedo/ldnd/govadmin/pfle/>

At least two libraries struggle with overcrowding in their public areas (possibly more but not every library was open during the site visits). Albina, though still a very pleasant space for customers, was crowded enough that it was difficult to move around without negotiating with other customers. Any book carts left in the public space block access to walkways and the holds shelf located in a key walkway between the circulation desk and the backroom.

St. Johns' public area was also more crowded than other libraries. This is partly due to the design of the building which has an open front area, a smaller middle area and then an awkward passageway (of lots of unusable space) before getting to the backroom. St. Johns had numerous shelving carts in the public area, five of which were used to semi-permanently store material for browsing.

Most libraries have more space dedicated to service desks than is ideal

Most MCL libraries have very large circulation desks and separate reference desks. Self-service check-out is minimally used and most libraries had a line of people waiting for check-out.

MCL neighborhood libraries staff the reference desk with one and sometimes two people (who are rarely professional librarians) who provide numerous types of support: answer reference and non-reference questions, help with public computers, help place holds. One reference person on staff reported they sometimes help with library card sign-ups when the circulation desk line is too long.

All of the libraries were remodeled just prior to the trend to smaller service desks and single points of service. As a result, too much of the public space is dedicated to huge circulation and reference desks with very small back office work areas. The problem with placing so many workers in public areas is that the workspaces are not optimized for the work that needs to be done. They are attractive but not designed for efficiency nor for ergonomically carrying out the necessary tasks.

The libraries would be in better position if they had more of the work being done in the backroom where the spaces could be designed specifically around the tasks. This would leave more space in the public areas for shelving material, additional computers, and for providing one-on-one services. However, the backrooms are very small so it would not be possible to relocate workers to the backroom without other significant changes to the space.

Reliance on holds to fill all requests for “hot titles” makes it difficult for walk-in customers to find something exciting on the shelf

Because all copies of hot titles can be requested via the holds process, popular material can sometimes end up moving from customer to customer without ever landing on a library shelf. When popular material circulates but isn't available to walk-in customers, those customers are forced to place holds and this makes matters worse. Satisfying the needs of walk-in or browsing customers is not only desirable from the service point of view, but it also alleviates much of the strain on the materials handling system because moving material from library to library to fill requests is so labor intensive for staff.

Staff report that hot titles often unavailable for months because there are so many holds on the available copies. Even though the holds to copy ratio is 6 to 1, the three week circulation period means that a customer may have to wait six months for an available copy.

Not enough room at Library Administration Building

The Library Administration Building now houses administrative and support staff, Technical Services, the Sort Center, and MCL's outreach services for youth and adults. The Library Administration Building, previously called the Extension Services Building, was built in the early 1960s to house the bindery, school service, bookmobile service, a revolving pool collection for the branches, and some branch support functions. In later years, the bindery closed, the pool collection was disbanded, and bookmobile service discontinued. In 1986, the administrative offices and Technical Services moved from Central Library to the newly named Library Administration Building, sharing space with outreach services and later, the Sort Center.

Subsequently, Library Facilities Management and Human Resources functions, which had been centralized for all County departments, were redistributed back to departments, and space for these functions had to be found at the Library Administration Building. Technical Services' workload increased as the materials budget grew and the need for additional target language materials increased, requiring additional staff work space.

The greatest increase in programs housed within Library Administration was youth outreach to children and teens. Fourteen new youth outreach programs require extensive space for collections and staff. New work space and collection housing needs have simply grown far greater than the space available to house them.

The result of all of these changes plus the additional programs and services is that MCL needs additional office and collection space for administrative, support and outreach services.

Workspaces for staff are too small

Workspaces throughout the library system are undersized. Three of the libraries have no offices so Library Managers and Library Supervisors have to operate out of cubicles. Many library staff share workspaces. Some of the libraries have no separate bathroom facilities for staff. Even though remodels were done in the last 5-10 years throughout the system, the funding was not adequate to sufficiently expand staff work space in most locations.

When there isn't enough room to work efficiently, tasks get done more slowly than they would in an optimized work environment. This, in turn, creates more of a backlog which makes it even more difficult to work and slows the process down even further. The result of this cycle is chronically backlogged material and overwhelmed staff who struggle to keep up.

Despite their best efforts, sometime staff just cannot keep up. For example, at least two libraries (Holgate and North Portland) reported that they regularly refused deliveries of interlibrary crates because they couldn't keep up with the work and had no place for storing the crates.

One of the workarounds to the deluge of material is to use book carts to park material temporarily. This technique was observed at St. Johns, North Portland, and Capitol Hill. Of course, book carts are not a good substitute for shelves because they clog the walkways, block access to other material and are not shelved in a manner that facilitates discovery (i.e. the knitting books on the book cart are not shelved with the knitting books on the shelf). The libraries acutely suffering from small work areas are North Portland and Belmont. Other libraries with small work areas are Albina, Gregory Heights, St. Johns, Holgate, Sellwood, Capitol Hill, and Rockwood; however, it may be possible to address some of the congestion by changing the amount of material flowing into the library at any one time and by redesigning how the available areas are used.

Some libraries have more holdings than they can handle (between shelving space and percentage in circulation)

Based on the Library’s expected capacity⁴⁴ of each library against the 2006/07 holdings, we find that most libraries have more than twice as much material as they can shelve. All libraries have more holdings than can fit on their shelves because they count on some percentage of material being in circulation at all times. However, we can see from Table 1, that at some point, the number of holdings exceeds what can be absorbed by circulation. For example, Table 1 shows that North Portland is almost three times over capacity. This library is struggling more than others to handle the volume of material being circulated there.

Table 1: Holdings over Adjusted Capacity (2006/07)

Library	Size (sq ft)	Capacity	Adjusted Capacity (based on % of material typically in circulation)	Actual Holdings (2006/7)	Percent Over Adjusted Capacity (as of 2006/7)
ALB	3500	20000	29,000	43,183	149%
BEL	5954	30000	43,200	65,851	152%
CAP	6060	20000	31,400	43,286	138%
FRV	4000	20000	31,600	31,492	100%
GRH	5997	20000	32,400	50,869	157%
GSM	20000	75000	120,000	135,022	113%
HLS	12000	75000	117,000	87,457	75%
HGT	6060	20000	31,200	48,983	157%
HWD	13000	75000	111,750	120,397	108%
MID	25000	75000	120,000	166,281	139%
NPO	9500	20000	31,400	58,777	187%
NWL	5000	20000	31,000	39,744	128%
ROC	6435	20000	31,000	40,577	131%
SEL	4375	20000	31,000	40,411	130%
STJ	6381	20000	31,400	47,607	152%
WOD	7500	30000	46,200	68,830	149%

⁴⁴ The capacity of each library is taken from the documentation provided by the Library showing each library’s holdings, number of items withdrawn, holds filled, circulation and turnover, from 2001 to FY06/07. Holdings is determined by Technical Services based on shelving space and the percentage of material that is in circulation.

Workspaces and workflow not optimized

In the case of libraries with very small work areas, four problems were apparent in most cases:

1. too many crates need to be staged (for pickup and delivery);
2. crate docks take up too much room and make the spaces less flexible;
3. too many sorting crates occupy coveted floor space;
4. check-in stations not configured optimally.

Delivery between most branch libraries occurs once a day, Monday through Saturday. On Sunday, some libraries get pick-up service (Belmont, Gresham, Holgate, and Woodstock), and some receive both pick-up and delivery service (Albina, Central, Hillsdale, Hollywood, Midland, and North Portland). Libraries do not receive deliveries on holidays. Libraries tend to receive more crates on Monday and Tuesday than any other days of the week. Crates get packed into the small spaces and staff must struggle to work around the stacks of incoming and outgoing crates. Often, they barely get caught up before the cycle begins again. When the libraries are closed for holidays, the one or two weeks following the holiday are particularly challenging because customers continue to request and return material whether the library is open or not. The work just backs up while the library is closed. All locations and Sort Center do schedule additional staff following holidays to deal with the additional work.

Most libraries reported that they removed bookdrop bins over holidays (and sometimes every Saturday night) because the number of returns exceeded the capacity of the bins. Therefore, material dropped into book returns over the holidays generally just drops onto the floor. When staff arrive after the holidays, their first task is to pick up the mountain of material from the bookdrop rooms and try to get it all checked in as soon as possible – before the first delivery hits.

Some of the libraries are still outfitted with crate docks originally designed by the delivery staff for storing folded crates underneath and sorting totes above. There are a couple problems with the crate docks:

1. they cannot be moved;
2. they make it impossible to pick up stacks of crates with a hand truck;
3. they have limited use for anything but sorting into crates;
4. they encourage too much pre-sorting of material.

Libraries have little flexibility when it comes to reconfiguring the spaces because the docks are built-in. Most of the docks are along a wall that could be used more efficiently for stacking crates which could then be wheeled out of the library with a hand truck. Instead, the crates are used for sorting and then each full crate is moved to a crate staging area for pickup.

The crate docks are very long and the libraries spread crates along the length of the dock to sort material into several categories. Even one of the libraries doing the fewest number of holds sorts to seven crates:

1. GSM returns
2. MID returns
3. ROC returns
4. Mix returns
5. mix holds
6. Central
7. discards

Most of the libraries have 9-14 crates spread along the crate dock into which material is sorted.

Given the efficient operation of the Sort Center, and the problems related to sorting in the libraries, it makes sense to reduce the amount of pre-sorting that is done and to free up some of the space dedicated to that effort.

One library recognized that the crate docks were problematic. Capitol Hill pulled out their docks as part of a complete redesign of their backroom. They have benefited from their effort. Using the additional space, they have been able to establish a single staging area for crates (delineated by yellow tape on the floor) so delivery staff can easily move crates in and out via hand truck.

The Capitol Hill staff also designated areas for their two check-in stations where shelving carts and pre-sort crates are shared between the two stations which saves space because only half as many shelving carts need to be used. Hillsdale and Hollywood have a similar set-up. Libraries like Gregory Heights, Belmont, Woodstock, Albina, St. Johns, North Portland do not (or cannot due to space constraints) set up their processing areas this way.

Capitol Hill has also committed itself to “aisle integrity” meaning that in addition to designated space for processing, they have also designated walkways. This ensures that all staff can freely move around the work area even when material is at a high point. Again, many of the other libraries do not have the luxury of allocating space this way (Albina, Belmont, and North Portland for example), while others *could* be redesigned to incorporate some of these ideas.

Some of the larger libraries suffer from *too much* space. For example, Midland has a very large backroom area and they use it for multiple staging areas resulting in a workflow with too many touches of the material. Bookdrop material is checked in at a processing station and sorted into stacks on the desk and book carts around the person doing the processing. Then, each stack is transferred to a sorting cart. Once the sorting cart is full, it is moved to a staging area of other full sorting carts that are ready for fine sorting.

Once the cart is fine sorted, it is moved to a different staging area for shelving. There were 18-21 such staged carts in the back area plus another 10-12 empty carts. All this touching, staging, and restaging of the same batch of material is very inefficient.

Belmont receives a disproportionate amount of delivery based on capacity

It is useful to look at patterns to find exceptions. One such exception is to compare delivery volume to each library against other factors. Using data provided by the Library of the number of incoming and outgoing crates delivered to each library location in June, 2008, we can see a pattern. Namely, that daily delivery volume roughly correlates to capacity of each library. The notable exception to this pattern is Belmont. While Albina, Belmont and Hollywood all receive a disproportionate amount of delivery based on their library size, Belmont receives more than 2.5 times the delivery volume expected based on its size.

Table 2: Belmont’s exceptional delivery volume (one month sample)

Library	Size (sq ft)	Capacity	Incoming + Outgoing Daily Delivery Crates (June, 2008 sample ⁴⁵)
ROC	6,435	20,000	616
FRV	4,000	20,000	684
GRH	5,997	20,000	1,016
HGT	6,060	20,000	1,090
NWL	5,000	20,000	1,094
CAP	6,060	20,000	1,111
STJ	6,381	20,000	1,113
SEL	4,375	20,000	1,124
ALB	3,500	20,000	1,305
NPO	9,500	20,000	1,313
WOD	7,500	30,000	1,485
HLS	12,000	75,000	1,553
GSM	20,000	75,000	1,572
MID	25,000	75,000	1,844
HWD	13,000	75,000	2,271
BEL	5,954	30,000	2,561

Another pattern that isolates certain problem areas is the relationship of building size to delivery volume. Here we see that as the building size increases, delivery volume generally goes up. The exceptions to this pattern are Albina, Belmont, and Hollywood. Albina receives twice as much delivery as Fairview which is 500 square feet larger. Belmont receives over twice as

⁴⁵ The June, 2008 sample data is drawn from one month of counting the incoming crates at each library. These numbers include the material delivered to each library from the sort center as well as from the Central Library.

much delivery as all other similarly sized libraries and even more than one of the regional libraries. Hollywood receives more delivery than other regional libraries including Midland, which is almost twice its size.

One of the points these patterns reinforce is that some of the libraries are too small for their communities. This fact is something that MCL administrators have known for some time but have not been able to resolve when building projects come up. For example, some of the funding for space originally planned for Hollywood was cut to provide funds for some additional space at Hillsdale. In addition, converting the project from a stand-alone library at Hollywood to a mixed-use building also required some compromises in use of space. In other situations, some of the local communities' love of their historic buildings meant that the sites were too small for expanding the size of the buildings to accommodate the size of the libraries that the communities really needed.

Table 3: Albina, Belmont, and Hollywood's exceptional delivery volume

Library	Size (sq ft)	Capacity	Total Daily Incoming and Outgoing Delivery Crates (based on June, 2008 sample ⁴⁶)
ALB	3,500	20,000	1,305
FRV	4,000	20,000	684
SEL	4,375	20,000	1,124
NWL	5,000	20,000	1,094
BEL	5,954	30,000	2,561
GRH	5,997	20,000	1,016
HGT	6,060	20,000	1,090
CAP	6,060	20,000	1,111
STJ	6,381	20,000	1,113
ROC	6,435	20,000	616
WOD	7,500	30,000	1,485
NPO	9,500	20,000	1,313
HLS	12,000	75,000	1,553
HWD	13,000	75,000	2,271
GSM	20,000	75,000	1,572
MID	25,000	75,000	1,844

⁴⁶ The June, 2008 sample data is drawn from one month of counting the incoming crates at each library. These numbers include the material delivered to each library from the sort center as well as from the Central Library.

External bookdrops jam and overflow on weekends and holidays

The external bookdrops throughout the system feed into fireproof bookdrop rooms that are narrow and small. The bins used in each bookdrop room are large, unwieldy, and difficult to use. Library staff have to empty the bookdrop bins every hour to keep up with the volume.

Bookdrop bins are removed on holidays because they will overflow and this makes it impossible for customers to get material into the bookdrop chute. The books then fall onto the floor unobstructed, but they have to be picked up manually by staff. At the oldest libraries (i.e. St. Johns and North Portland), both originally opened in 1913, the bookdrops jam even when the bookdrop bins are not full.

In an attempt to handle the volume, some of the bookdrop bins used are very large, and very deep. This makes them difficult to move because they are heavy (especially when loaded with 100 or more books). They are deep which makes it difficult to reach down into them to get the books out.

Many of the libraries use the laundry basket style bookdrop bins which can be tilted so that material can be more easily removed. Some staff said they use the tilt feature but over the course of the library visits, very few workers were observed working from the tilted bins so it is unclear how useful this feature really is.

Bookdrop bins found in libraries across the country are designed with springs that are supposed to keep the material high enough in the bin that it is always easy to access. This way, staff can process material directly out of the bins. However, these springs invariably lose their stiffness over time and gradually staff find themselves reaching further and further into the bins to get items out. The plastic bins used at many of the MCL bookdrops work as well as any bookdrop bins but some are starting to lose the stiffness that keeps material high enough for easy access.

One of the more creative approaches to handling bookdrop material was observed at Northwest where five crates were positioned underneath the bookdrop. Material came through the bookdrop and landed in the crate directly below the drop but when that crate was full, material slid into one of the crates on the side or in front of the center one. This approach ensured that the material could be easily picked up (one crate at a time) and it was easy enough to ensure the dropped material would stay within the confines of the five crates. Not a glamorous solution but it seemed to eliminate some of the problems of deep, heavy, hard to use bins (that also take up too much space when they aren't being used).

Self check-out machines are under-utilized

The MCL self check-out use (system-wide) is under 20%. This is much lower than is typical of most libraries nationwide who find their self check-out machines are used at least 50% of the time or more.

Some libraries do not have a self check-out machine because there wasn't enough room for them. Those that do have one or more do little to promote their use. The machines are first generation 3M machines, commonly referred to as The Tank because they are so large, unattractive, and imposing. The self check-out machines made today are much more attractive, easy-to-use, and multi-functional. They don't just check-out material, they can also be used to pay fines and perform other account management functions.

In order for self check-out systems to work, library systems must implement them in a way that promotes their use. It is important to position the units so they fit into the customer's workflow, all material must be easy to check-out at the units, space must be available for customers to stack material and place in backpacks while performing the transaction, and signs and staff must make it clear that the self check-out machines are the proper place to go to check-out material, rather than the circulation desk.

While self check-out use has never been high at neighborhood libraries (although it reached nearly 70% at Central for a period of time), it was higher before the media for DVD and CD holds were put behind the circulation desk. It is impossible to increase self check-out use when so many customers must first interact with staff just to get the item they are checking out. Self check-out use dropped by six percentage points as a result of the policy that separated media from cases for DVDs and CDs on hold.

Technical Services and Collections

With new leadership in the Technical Services and Collections department, the unit is slowly being transforming from one noted for its centralized decision-making to one that is more collaborative. Some of the observations made below represent issues that are in the process of being resolved as the unit moves in the direction set by the new manager.

The current selections team is composed of three selectors for English language materials, one part-time selector for Spanish language material (1 day per week), and an electronic resources selector. Selection of materials in non-English target languages is a collaborative effort between bilingual branch staff and the selections office. The materials budget in 2007/8 was \$6.28 million (an increase of 112% since 1999). This include funding from all sources—public, gifts and endowment

Twice a year, the Selections office presents a half day seminar for library staff entitled “How MCL Selects Material.” As part of the seminar, the selectors explain which selectors are responsible for each type of material and how they make their selections. They also identify current trends among MCL customers and collection use. They note that material that is circulating most actively falls in the following categories: entertainment DVDs and music, biography and memoirs, cookbooks, crafts and drawing, history, gardening, home improvement, health and fitness, pregnancy, travel, Iraq, political hate books, true crime, and “green” oriented topics. Low circulation material includes material on religion, sports, philosophy, government and statistics.

The electronic resources budget is \$825,000 (13% of the total materials budget). The most expensive electronic resources item is Tutor.com at \$53,000 per year. Some of the most popular databases in use are Reference USA, the EBSCO package from the State Library, JSTOR, Morningstar, and Novelist. An evaluation of the electronic resources collection is currently underway. This is a cooperative effort between the Reference Action Team, subject librarians throughout the system and the Selections Office. The Library has also contracted with a library vendor, Serials Solutions, for a service that monitors and reports coverage information as well as a hosted tool to manage the electronic collection.

Scheduled weed useful but insufficient

Every month, a scheduled agency weeding is performed at one of the libraries. A team composed of branch staff, Selections Office staff and community volunteers weed from lists of material to discard or review (2008 Weeding Guidelines) and also weeds for condition. In addition to the scheduled weed, the Selections Office works with branch staff to produce monthly reports on low circulating items in specific collection areas. Each

library decides for itself how often the list will be run. For example, Albina, Belmont, Capitol Hill and Fairview receive a quarterly report of all non-fiction items that haven't circulated for nine months whereas other libraries receive a biannual report of non-fiction items that haven't circulated in 12 months.

The libraries rely heavily on the scheduled weed. In fact, some of the libraries reported they do very little weeding in between. Some reported using the monthly lists as guidelines. Others used the monthly lists only when a section became too full. Others never used the lists. Despite the Collection Maintenance policy which suggests that libraries are weeding their collections on a daily basis, for some libraries the bulk of weeding activities happen during the scheduled weed. In most cases, staffing levels and workload are a critical factor in how much time staff can spend weeding.

Based on a recent analysis of weeding effort of both the libraries on their own and the scheduled weeds, 9 of the 16 relied on the scheduled weeds for over half of their discards. Of those 9 libraries, all but two of them maintained their collection size or reduced the collection size. In order to ensure that the shelves will be able to handle the new material, it is important that each library keep a steady collection size or possibly reduce it. Libraries being weeded with the help of the Technical Services team are able to accomplish this goal.

Five libraries did 100% of their own weeding. In three cases, the collection sizes expanded 9%-13%. Four of the libraries weeding on their own (two of which do 100% of their own weeding and two of which do 56% or more of their own weeding) were able to maintain the same collection size.

Library shelves that have been recently weeded (e.g. Fairview) or with staff onboard who take a pro-active approach to weeding (e.g. Hillsdale, Gresham) have more room on their shelves and a better overall appearance. The degree of involvement neighborhood library staff have with weeding as a core activity directly impacts the condition and size of their collection.

Table 4: How weeding is done and how effective it is at maintaining a stable collection size

Location	Total Items weeded FY 07-08	% weeded on their own	Change in collection size between FY 06-07 and 07-08
Belmont	15,398	100%	13%
Capitol Hill	8,172	100%	9%
Hillsdale	22,311	100%	0%
Hollywood	19,093	100%	1%
Sellwood	4,085	100%	11.80%
Northwest	8,096	57%	-1.60%
Midland	28,091	56%	-5%
Rockwood	6,387	48%	8.10%
North Portland	9,858	46%	2%
Gregory Heights	13,696	42%	0%
Holgate	13,566	39%	5%
Woodstock	16,580	39%	-1.10%
Fairview	9,803	38%	-7%
Albina	11,828	35%	-3%
St. Johns	11,681	29%	-4.70%
Gresham	28,664	26%	-4%

It wasn't clear that all library managers and library supervisors recognize that weeding is a critical part of collection maintenance. Weeding was sometimes described as an antidote to areas that had become too full. The idea that weeding is an important way to keep a library collection healthy and attractive to customers was not always apparent. Because of the amount of new material that each library must make room for, it is especially important that weeding happens on an ongoing basis so that there is always enough room for new, popular material without causing congested, difficult to manage collections.

Shelves too full at many libraries

When a library continues to add more new titles to their collection and weeding doesn't occur as often as it should, the shelves become so jammed that shelving material is more difficult and time-consuming. It is much easier and quicker to return an item to the shelf when the shelf is three quarters full rather than so packed the page can barely remove a single book. One page

was observed for several minutes as she shifted material around between three shelves in an effort to reshelve an item.

Shelves that are too full are also less enticing to customers. Many U.S. libraries are moving to a merchandising model for displaying material. Rather than shelving everything spine out, one or two books are set up with the book jacket on display. Some of the MCL libraries follow this trend but not all because they have too many items on the shelves. Without at least one third of a shelf free, it is impossible to effectively merchandise anything.

Current holdings per capita much less than competing libraries

The pressure of too much material for too little space could easily be resolved by reducing the amount of material stored on the shelves. However, based on comparisons with peer libraries, MCL’s collection size is already smaller than is ideal. See Table 5: Holdings Per Capita at MCL Low.

Based on peer libraries, MCL holdings per capita numbers are lower than all but one other library. To provide the best service possible, MCL’s goal is to expand their collection so that the holdings per capita approaches 4.0 (or more.)

Table 5: Holdings Per Capita at MCL Low

Library	Holdings Per Capita
Cuyahoga County	5.3
Denver Public	4.3
Columbus Metro	3.0
Multnomah County	2.8
Hennepin County	2.7

Selection not as good as it could be for each library

Many of the libraries still report that they sometimes get more copies of items than make sense, or they get titles that don't make sense for their community or that certain parts of their collection are consistently too big or too small. For example, Northwest reported that their Teen Collection was too large given the fact that they have so few teens. Per Northwest staff, they have few teens because they have no 'teen space' which is what draws the teens. Two libraries reported they have a hard time making enough space for the picture books and graphic novels. And one library felt that the fiction selections were predominantly composed of material most heavily covered in the trade press.

It is important to note that there is no formula for determining in advance what patron demand will be, especially with fiction. Much of the work of selecting fiction relies heavily on the size of publisher's print runs as an indicator of anticipated demand, the track record of existing authors, etc.

The job of the selectors is particularly challenging because of the space restrictions. There is no room for anything extra on any of the library shelves. Therefore, while the selectors are doing their best to distribute material to the libraries appropriately based on their size and their communities, not all of their choices are right 100% of the time.

Communication between library staff and Selectors needs improvement through additional formalized processes and better training for library staff

Some library staff reported feeling they didn't have enough say in the selections process. Some reported that they would like more control over what titles ended up on their shelves so they could coordinate the holdings with programs more effectively. For example, while libraries are responsible for creating their own Reader's Advisory lists, they don't have the authority to ensure enough copies of titles they recommend will be available to their customers. Some library staff stated that they felt powerless about dealing with material that isn't moving. Some reported they just wait for these items to be removed during the big weed (or they hope they will be weeded then, anyway). And finally, at least one staff person reported she sometimes sets aside certain titles to ensure they can meet in-library customer requests.

However, despite the feelings expressed at the libraries, there are several avenues available for library staff to participate in selections decisions:

1. Selectors have designated contacts who contribute order recommendations every month for youth materials, youth audiobooks, mass market paperbacks, classical music and local music.

2. Nonfiction selector receives monthly orders from eight librarians at Central. In almost all cases, these recommendations are routinely ordered.
3. Materials needed for programs are almost always automatically ordered but requests aren't always made with enough advance notice to get the material in hand in time for the program
4. Programming staff has its own budget for directly buying certain kinds of items they need for programs
5. Anyone can send in an idea or request through the request form

The centralized selection concept rests on the principle that selectors are building a system-wide collection and taking in the need of the whole. This is carried out through 50+ distribution formulas that sprinkle titles throughout the system. Because any customer can place a hold on any item, the holds system assists with distribution and services the small locations. Items that are part of the shared collection are also distributed by means of the customer's circulation and return patterns.

There is always a natural tension between central selection staff and individuals working at neighborhood libraries. MCL is no exception. The struggle is to ensure that the feedback mechanisms work in both directions. The goals of the Selection Staff must be well understood by neighborhood library staff and library staff must be aware of all the mechanisms at their disposal for getting their selections needs met. In addition, the needs of neighborhood library staff must be well understood and accounted for by the Selections Staff.

In the case of MCL, it appears that there are mechanisms in place for library staff to request material and contribute to selections decisions; however, these avenues for participation may not be communicated as well as they could be, or the library staff that do participate with the central selections team may not be involving their co-workers as effectively as they should.

Specific suggestions for improving communication between library staff and selectors include:

1. Rotate library contacts responsible for providing suggestions for youth materials, youth audiobooks, mass market paperbacks, classical music and local music on an annual or bi-annual basis;
2. Identify subject librarians from neighborhood libraries who can provide recommendations to selectors;

3. Offer more frequent workshops at neighborhood libraries about how the selections process works and how they can be involved (currently these only occur 1x per year) ;
4. Make sure library staff weeding material based on condition route popular items to Selectors so they know replacement copies should be ordered;
5. Establish a request form for staff to use when requesting titles or material in a specific subject area so Selectors know where the request is coming from and can respond to the request;
6. Establish lead time requirement for staff requesting material for programs so that library staff know how far in advance their request must be made in order to ensure arrival on time.

Suggest a Purchase process does not include follow-up

The Library website includes a form that customers and staff can use to request items for purchase. The form asks for author, title, format, price, publisher, ISBN/ISSN number but none of these fields are required. There also three text fields where the person making the request can provide more information about the topic of the item, describe where they heard about the item and suggest subject areas where more material is needed.

This is all useful information for the Requestors who incorporate the feedback into their decision-making process. However, there is no feedback loop back to the person making the request. The only way someone filling out the form can find out if their item was purchased is to keep searching the catalog.

Distribution formulas slow to adjust

While the selectors work hard to develop appropriate distribution formulas (over 50 distribution formulas are currently in use) that take into account the variation among the libraries, it is difficult to respond quickly to changes requested because of the way orders are placed. Material may not arrive for 6-9 months after it is ordered through pre-orders with a publisher. These orders are based on a specific distribution formula. Even if the distribution formula has since been changed, when the order comes in that was based on the old distribution formula, it creates the feeling that the libraries' requests are falling on deaf ears.

There is little that can be done about the fact that pre-orders will arrive based on distribution formulas in place several months earlier. However, it may be possible to use training to better explain the process (and limits of the process) to library staff. It may also be possible to provide a vehicle for libraries to appeal selections decisions that appear at odds with their local needs.

Process of re-allocating shared collections cumbersome

Audio cassettes, CDs, CDROMs, DVDs, videos, board books, and large print books are shared among the libraries. This means that any of these items become the property of the library to which they are returned (rather than being put into delivery to get back to the “owning” library). Instead, items are checked in and immediately reshelfed at whatever library the customer returns them. Customers tend to like this system because it refreshes each location’s collection of these popular materials. Sharing also substantially reduces the amount of time these materials spend in delivery crates, increasing their availability and cutting down on workload in the sort center and delivery system.

However, shared items don’t always distribute themselves ideally. For example, one jazz fan picking up holds at a single library can result in a large percentage of the entire system’s jazz CDs ending up in that library. They will stay at that location if returned there until another jazz fan requests them. Therefore, it is important to have an efficient system in place for re-allocating shared collections.

Shared Collection policy states that if one location has too many shared items, they should follow these steps in order:

1. Weed items for condition in order to make room for incoming items.
2. Create shelf room or display areas for these items.
3. If items still cannot fit at your location: Branch Leaders may call or email other Branch Leaders to determine whether any other branch has room. Items should only be sent to another branch with an explicit invitation.

In order to identify another library that wants another location’s overflow, an email must be sent out to all libraries and the sending and receiving libraries should agree on what to send to whom.

While most libraries will probably be motivated enough to offload some of their overflow to engage in some email exchanges that will identify a taker, one library had a shelving cart full of shared material that they “couldn’t fit in.” It is even less likely that libraries will proactively identify shortages and seek out the desired material *before* customers start complaining.

The email approach to redistributing shared material is cumbersome, interruptive, and slow. Given the number of messages people receive each day, finding a solution that does not involve several email exchanges and including several disinterested parties in the communication would be preferable.

Shared collections not managed as systematically as non-shared material

Library policy states that all problem shared collection should be handled by the check-in location including decisions about what to repair and what to discard. However, few libraries reported taking on this responsibility. One library worker reported it was futile to weed the floating collections because “they just keep coming.”

Snags (items with pieces missing such as a DVD case with no DVD inside) from shared collections were observed in each library but the work of matching up missing pieces is labor-intensive. While it may be true that one of the library’s home customers left the DVD in their DVD player, it could also be true that the item was borrowed by another patron and simply returned at the location that identified the snag. In other words, neither the snag nor the customer feels like it belongs to the particular library location stuck dealing with it. As a result, the shared collections, more than other parts of a library collection, tend to be less well-tended.

Some issues with inventory: what is missing, lost, or simply misshelved?

Some libraries reported dissatisfaction with the speed with which replacement items were introduced into the collection.

Items get triggered as missing when they appear on a pull list (to fill a hold) or on the Weed List, but they cannot be found. Appearing on these lists indicates that, according to the catalog, they are available and on the shelf. When staff assigned to pull the item cannot find what should be on the shelf, they set the item’s status to missing. Missing lists are generated regularly to be searched by staff in each location.

Lost or misshelved items can also be identified by proactively searching the library catalog for items with zero circulations (many of which would naturally turn up on the Weed list) or for items that have been checked out but not returned. Some library staff expressed a desire to receive these types of reports so that items that are actually not available could be more accurately noted in the catalog

Libraries that have moved to RFID systems (for security and identification) have reported that one of the benefits is that lost items are more easy to find. Without an RFID system, it falls on the local staff to regularly “read shelves” to find misshelved material. This is very time-consuming and helps locate misshelved material but doesn’t always help find hidden material the way a radio-signal based RFID system does.

Separation of media from CD and DVD collections very expensive

Since June, 2005, library policy has been to keep DVDs and all CD and DVD holds behind the circulation desk. While customers can browse circulating

DVD cases, they must get the media from library staff. The DVDs are stored an assortment of ways. Each library has worked to resolve the problem with its own storage and retrieval system.

The inspiration for this policy was a series of newspaper articles taking the library to task for high loss rates of this type of material. However, the cost of this policy may well exceed the value of the lost material. Central reports spending as much as \$160,000 on staffing the Media Holds Desk. In order to justify the staffing alone, the loss rate at Central would have to be around 8,000 items per year (average \$20/DVD). This doesn't even take into account the double storage requirements associated with each item.

In addition, the fact that customers must get media from staff has decreased the use of self check-out machines system-wide by 6% (significantly more at Central) so that it doesn't just effect one transaction but every other transaction that occurs with a customer whose checkouts include even one DVD or CD.

Most libraries are moving to solutions that are less labor intensive, rather than more. For example, by adding RFID tags to all material and implementing an RFID based security system, the security of all material is assured at the same time that self check-out is supported.

Issues with movie DVDs

The Library has almost 13,000 titles on DVD (over 82,000 holdings). Some are educational and others are for entertainment. There was much discussion in the focus groups of the Library's role in relation to entertainment DVDs. Some staff question whether the Library could, or should, try to be a free Blockbuster for their community. Others feel that anything that brings people into the libraries is beneficial. Others expressed the desire to simply "give the customer what they want."

The Library could never compete with Blockbuster (85,000 titles) or Netflix (100,000 titles) in terms of the breadth of the collection; however, it does continue to provide DVDs for free while both Blockbuster and Netflix are fee-based services but they are available for a very low price. Netflix offers a \$4.99 per month plan that allows for one movie at a time.

The turnover of Adult DVDs is higher than any other format at 14.2. Juvenile DVDs are among the top five at 12.1. Because of the high turnover rate and the policy of separating media from cases, it probably costs the library more time and money to circulate this type of material than any other.

Another issue reported with the DVD collection is that the bar codes on some items are extremely small, adding yet another annoyance (if not actual cost as calculated in staff time) to the cost of each DVD transaction.

At Midland Library, MCL is experimenting with Frich Corporation's Lock-A-Shelf self-service system for secure DVD display and check-out. Other similar systems include Libramation's Media Bank, and LAT's Intelligent Media Manager.

Over time, more and more movies will be available for download. The Library is already experimenting with vendors that provide these services. In November, 2007, the Library added the MyLibraryDV service (from Recorded Books) but that was just discontinued because the selection of titles didn't appeal to customers and the price of the service was very high. The service suffers from ongoing complications related to Digital Rights Management restrictions imposed by the content providers.

In May, 2008, the Library2Go service (from Overdrive) was added. There are approximately 1240 downloadable digital videos available through this service. Each title is searchable in the library catalog. Library2Go provides children's downloadable videos and audiobooks and is made available from the Oregon Digital Library Consortium. DRM issues also come into play for Overdrive material resulting in more limited title lists that customers desire and restrictions in where they can be downloaded and/or viewed.

Increasing numbers of movies (especially documentaries) and TV shows can be downloaded for free or watched on one's computer. As issues with DRM are resolved, it is likely that services like Overdrive and Library2Go will gain in popularity and provide more options for making material available to customers without having to provide shelf space for each title.

VHS and cassette tapes being phased out

The Library has 6,000 titles in VHS format (23,000 holdings), 6,000 titles in Books on Tape format (18,000 holdings), and 356 Music Cassette titles (almost 26,000 holdings). These formats are gradually being phased out in favor of DVDs, Books on CD, and downloadable formats.

Holds

Offering customers a way to select an item from any location and have it delivered to any location and set aside for them to pick-up at their convenience has been one of the most popular services ever offered by MCL. However, the service creates some undesirable consequences. The volume of holds being shelved for self-service pick-up means there is less shelf space available for browsing customers,

More holds means more crates being delivered to each library that require processing in the backrooms. The backrooms are too small to handle the increasing numbers of crates coming in each day, processing the material slows down due to the cramped quarters and inefficient work spaces. Eventually, the material starts backing up.

The effort associated with preparing a hold for a customer is significantly more labor intensive than a circulation transaction completed by a customer browsing the library shelves. So, while it is important to offer the service, libraries must be careful that they do not create a situation where more holds are being placed than are necessary to satisfy customer needs.

Getting a handle on holds is critical to the problems faced by the Library. The following are observations that relate specifically to holds. Some of the issues have been addressed in other sections of this report but it is important to see how these issues connect back to holds in order to get a handle on how best to address the problems.

Holds take up 1% - 9.5% of total shelving in the libraries

When the libraries were renovated, each had shelving behind its circulation desk dedicated to housing the holds. However, the exponential increase in holds volume soon overwhelmed the space available behind desks. Each library now has a range of shelving in the public area dedicated to self-service holds pick-up. Each item that a customer has requested (whether it is pulled from the pick-up location or it has been delivered to the pick-up location from another library) is labeled with a hold slip containing the customer's name and pertinent title information. The hold slip is attached to the item and the item is placed in alphabetical order by customer last name (or in order by ILS record number if the customer has requested greater confidentiality) on the public hold shelf. As noted earlier, DVDs and CDs that are on hold are shelved separately behind the circulation desk.

Based on linear feet and how shelves are currently allocated, the percentage of total shelving space dedicated to holds ranges from 1% to 9.5% of the total shelf space available in each library. This shelving was previously available to house each library's circulating collection.

<u>Library</u>	<u>% Shelving Library for Holds</u>
Belmont	9.5%
Albina	7.8%
Fairview	6.1%
Capitol Hill	5.7%
North Portland	5.4%
Hillsdale	5.1%
Hollywood	5.1%
Northwest	4.4%

Many Holds Expire

Although customers enjoy the option of placing holds on material and having it brought to the location of their choosing, a large percentage of the held items are never picked up. System-wide, an average of 15% of holds expire before the customer picks them up. (The range is from 12% at smaller locations to 17% at larger locations.) These percentages have held steady for the last several years.

When a held item expires on the hold shelf, it causes two problems: one, library staff in two locations and sort center staff waste valuable staff time and gas money (assuming the item is transported from one library to another), and the item is out of circulation for 7 days while it sits on the hold shelf.

It is a significant amount of work to get a requested item from one library to another and then up on the hold shelves. The process involves the following 13 steps:

1. Staff print pull list
2. Items located and removed from the shelf (100-300 items per day per neighborhood library; 700-900 per day at Central.)
3. Items scanned to change status to "in transit"
4. Items placed in crates
5. Delivery picks up crates and takes to sort center
6. Items unloaded from truck and placed in Sort Center
7. Sort Center staff sort
8. Items loaded back into truck for delivery next day
9. Delivery drops off crates at pick-up location
10. Staff scan each item to change status to "on hold shelf"
11. Notification sent to customer who has requested the item (automatic)
12. Holds slip prints out and staff place in or around item
13. Items shelved on holds shelf in alphabetical order by customer name

If the hold expires without being picked up, the following additional steps are taken:

1. Staff prints “Clear Holdshelf” report from ILS
2. Staff find expired items on hold shelf and pull them
3. Hold slip removed from each item
4. Items scanned to change status to “in transit”
5. Items placed in crates
6. Delivery picks up crates and takes to sort center
7. Items unloaded from truck and placed in Sort Center
8. Sort Center staff sort
9. Items loaded back into truck for delivery next day
10. Delivery drops off crates at owning library
11. Staff scan each item to change status to “recently returned”
12. Items are reshelved

While the item sits on a hold shelf, or is in transit, it is unavailable to browsing customers and to other customers who have a hold on the item. It is likely that every item that wastes 7 days on the hold shelf generates yet more holds because often it is the most popular items that are requested.

Between the work involved in those 25 steps above, plus the fact that the item is unavailable to other customers who may instead place holds on other material, it becomes clear how important it is to reduce the number of expired holds.

Not easy for patrons to cancel holds and manage hold queues

One way to reduce the number of holds is to make it easy for customers to monitor their hold list and cancel those that they no longer want (before they start moving around the system). Unfortunately, the integrated library system (ILS), Millennium, is very limited in how much information is available to staff and customers about items on their hold list.

Ideally, customers would receive regular reminders about items they’ve placed on hold, items they’ve “frozen” (suspended the hold request temporarily), and requested items that are going to be available soon. The reminders sent (via email in most cases) should provide quick links to the library system for canceling or freezing holds, changing a wish list item to a hold request, and vice versa. Unfortunately, this functionality is not available (nor even on the release schedule) of any currently available proprietary ILS. However, as more libraries get involved in Open Source ILS development projects, this functionality may become available sooner.

The MCL ILS does offer a “My Booklist” feature but it doesn’t include any holds management nor notification features.

Customers use holds for browse-on-demand

Library staff report that some customers use holds to collect a wide range of material on a given topic so they can evaluate all the available options then only check-out the one or two that they like (e.g. requesting all the “how to build a deck” books). These customers take advantage of the rich resources available through the entire library system by bringing a browsing collection to their favorite library.

This “browse-on-demand” technique puts a heavy burden on library staff that process all those holds to get the items to the customers only to have to return most of them to their owning library after the patron makes his selections (much like the labor intensive problem associated with expired holds).

Many of the items in the MCL catalog have some enhanced content purchased from Syndetics: cover images, table of contents, summary, review. However, the customer has to be savvy enough to click on the cover image to see any of the enhanced content.

There are other ways to add useful information about the items in a catalog including the following:

1. Making it more obvious when enhanced content is available
2. Adding Amazon’s “Peek Inside” feature to titles
3. Providing links to full-text versions of titles that are available online
4. Allowing customers to add reviews and tags
5. Incorporating LibraryThing for Libraries to use tags and review generated there


The more “virtual browsing” the library can support, the less the “browse-on-demand” system will be called upon.

“Place Hold” is very prominent choice in the catalog



When using the library catalog, the first screen of information that displays shows the titles (some of which are underlined) that are responsive to your search, book cover images for some titles, a format indicator (e.g. a graphic that looks like a book or a disk image for DVDs) and a button that says “Place hold.”

A search for “deck building” displays search results as follows:

The screenshot shows a search results page with two entries. Entry 1 is titled "Advanced deck building." and includes the publisher "Creative Pub. International" and a "Place hold" button. Entry 2 is titled "Building a deck : expert advice from start to finish" and includes the author "Schuttner, Scott." and a "Place hold" button. Both entries have a small book icon and a "Book" label.

1 [Advanced deck building.](#)  Book
Minnetonka, Minn. : Creative Pub. International, c1996. 120 p. : ill. (some col.) ; 29 cm.
690.893 A244 1996

entries 2-3

2  [Building a deck : expert advice from start to finish](#)  Book
Schuttner, Scott.
Newtown, CT : Taunton Press : Distributed by Publishers Group West, c2002. 186 p. : ill. (chiefly col.) ; 28 cm.
690.893 S396b 2002

Given this listing, the obvious thing for a customer to do is to place a hold for the items of interest. It is possible to click on the title link to see if the item is available in one’s local library but this additional step has to be performed for each title.

Even if the customer is savvy enough to mark certain titles, add them to “My list” and then view the marked items together, it is still impossible to tell if any of them are locally available. Also, in the list view, it is impossible to tell (because book cover images have been removed) when enhanced content is available.

ILS issues with holds

The ILS has some glitches in how it handles holds which cause trouble for customers and for staff. For example, the Holds-Copy ratio counts “missing” items as “in,” which means that the trigger to purchase more copies based on demand, doesn’t kick in when it should. Obviously, if items are “missing” they are not satisfying requests. This may be one of the reasons that one Selection Staff member reported that the actual holds-copy ratio is closer to 10-1 than 6-1 as the policy states.

Another problem with the ILS and holds has to do with staff workflow. When a customer requests a hold, the system attaches the request to a specific item but not necessarily to “available” items only. The result is that titles on a library’s pull list include items that have been “withdrawn” as well as items that are “recently returned.”⁴⁷

⁴⁷ System staff are currently working on a way to work around this issue so it may be resolved shortly.

Waiting lists for titles not being resolved

Library policy states that Selectors are to purchase additional copies of a title when at least six requests have been placed for each copy in the collection (6-1 holds to copy ratio). A 6-1 holds to copy ratio results in a six month waiting period for an item because the circulation period is 3 weeks.

Some library staff observe that some copies of titles they own never touch the library's shelves because they are so busy filling holds around the system. Some titles have waiting lists for years and they aren't necessarily particularly "hot." For example, one staff person reported that the book Good to Great has had a 1-2 month waiting list for seven years.

Filling holds slow

Libraries report that it can take 7-10 days to get an "available" item from another library (and even longer from Central before recent process changes there). One staff person reported that hold requests sometimes seem to "stall out" even though the availability of the item is listed as "on shelf." While most libraries direct their staff to give holds a higher priority than returns, at least one library reported that they routinely reshelve returns before getting holds on the shelf because they believe this will reduce the number of holds that need to be placed by their customers (who will more likely find what they need on the shelves).

Central and Stacks staff commit significant amount of staff resources to filling and reshelving holds

Each day, staff from Central and Stacks pull approximately 750 holds to fill neighborhood library requests. The fill rate is 95%. The work is done between 9:30 and Noon each day so that material can be sorted (by Central staff) and ready for delivery by the 2:30 delivery pick-up. In order to optimize the pulling process, Stacks personnel prepare customized paging lists in room order. While the customized pull lists (which print items in Dewey order) make it much quicker to pull most items, some material is not stored in Dewey order (e.g. sheet music) so it is very time-consuming to locate when requested.

Stacks staff reported spending 5% of their total staff time (each day) to pulling holds. Each item pulled from stacks takes approximately 1.5 minutes (find item on optimized list, place on cart, scan to put "in transit", sort by requesting library, place in crate).

Shelving holds slow and problematic

Some libraries cannot physically store all the holds they request for their customers. North Portland recently expanded their holds pickup area and immediately filled the space, yet still had 14 crates that couldn't be shelved.

At the Belmont Library, the problem was so severe in 2007 that 5,000 items were weeded from the collection to make sufficient room for holds. Other libraries have also increased their allocation of shelving for holds.

Many of the libraries reported being behind by 2-3 days with shelving delivered material (Gregory Heights, Midland, Hillsdale). Most give holds a priority, but some (e.g. Woodstock) prioritize reshelving returns on the theory that if more material is on the shelves, fewer requests will be made.

Media holds behind desk reduces self check-out use and is expensive

When DVD and CD holds were moved from self-service pickup shelving to the circulation desk where staff had to get them for customers, self check-out use went down 6 percentage points system-wide.

The effect at Central was most dramatic. Self check-out use went from 62.1% in 2002/3 down to 34% in 2006/7. Staffing the "Media Holds Desk" at Central costs between \$120,000-\$160,000 per year.

Patterns of hold use discernable

Table 6 provides a look at circulation records (supplemented with some analytical work by the Systems staff) reveals certain patterns in holds use. The most obvious pattern is that juvenile and YA material is not generally put on hold. This data is supported by observations by Selectors and library staff as well. Everyone seems to recognize that it is important to have Juvenile and YA material, especially CDs and DVDs, available for browsing.

In contrast, all Adult media categories are placed on hold prior to first check-out at least one third of the time.

Most Juvenile material is usually checked out via browsing (no hold placed on the item first) although 20-30% of the time Juvenile Large Print Books, CD spoken fiction, CD-ROMs, DVDs are placed on hold first.

Another pattern to notice is that the two foreign language categories (Book foreign fiction and Book foreign non-fiction) are rarely placed on hold prior to check-out (under 8.6% of the time in all categories).

While YA and Juvenile material is sometimes moved through the holds system, based on these numbers the vast majority of holds are for Adult

material (especially media), most Juvenile material and foreign language material is found via browsing.

With this kind of data available, it may be possible to target the kinds of material that are most desirable by browsing, walk-in customers versus customers who prefer to use the catalog to place holds. To the extent that patterns can be identified, it becomes possible to better cater the neighborhood library collections to suit the community and consider moving “hold-oriented’ material to an off-site location.

Table 6: First Time Checkouts and Holds

Percentage of First-Time Checkouts That are Put on Hold First			
Based on sampling of FY2008 (First Half)			
	Juvenile	YA	Adult
Book, Large Print	30.5		33.2
CD spoken fiction	26.9	24.4	30.8
CD-ROM	26.7		43.5
DVD	22.9		31.3
CD Music	17.1		37.9
Book, fiction	17.0	27.2	31.8
Book, non-fiction	14.5	21.1	37.3
Video	14.3		30.1
CD spoken non-fiction	13.3	11.1	41.4
Audio Cassette fiction	10.7	17.2	21.7
Book foreign non-fiction	8.5		8.1
Audio Cassette, Music	8.1		
Book, easy	7.1		
Audio Cassette, non-fiction	7.1	12.2	24.2
Book foreign fiction	6.1	9.3	6.0
Reference	3.0		1.2
Board book	2.5		

Sort Center and Delivery

One of the keys to efficient materials handling is the delivery and sort operation. For MCL, delivery and sorting operate out of space at Library Administration. The loading dock is inside a large, covered warehouse space. Delivery trucks can easily back up and unload directly onto the loading dock. The dock is conveniently located adjacent to the sort center.

The Library runs three delivery routes Monday through Friday, two on Saturday and one on Sunday with 4 drivers and 3 vehicles (plus one spare). All libraries receive one delivery per weekday and Saturday except the following location which receive additional visits:

- Albina - 2 per weekday
- Belmont - 2 per weekday
- Hillsdale - 2 per weekday
- Hollywood - 2 per weekday
- Midland - 2 to 3 per weekday
- Central - 4 to 5 per weekday

On Sunday, some libraries get pick-up service (Belmont, Gresham, Holgate, and Woodstock), and some receive both pick-up and delivery service (Albina, Central, Hillsdale, Hollywood, Midland, and North Portland). Libraries do not receive deliveries on holidays.

The Sort Center volume has been going up consistently. In 2007, between 18,601 and 19,428 crates were sent out quarterly. In the first quarter of 2008, over 20,600 crates were delivered. Based on the trend between 2004 and 2007, the Library predicts an increase of 108.15 additional crates per quarter.

The Sort Center operates Monday-Saturday.

Sort Center operation very efficient

The Sort Center is configured and operated very efficiently. In 2007 the staff participated in a Six Sigma process that resulted in several changes that ensure staff processes and use of space are optimized. Based on the Six Sigma findings, the Sort Center processes 9.1 crates per person hour which is 79% of entitlement (defined as the full potential benefit to be achieved from a process). The standard target is 70% of entitlement which means that the Sort Center is operating at “a very high level of efficiency.”⁴⁸

⁴⁸ This data is drawn from the Performance and Policy presentation conducted August 6, 2008 entitled “Library Materials Processing and Delivery.”

Shelving for sorting has been configured to ensure sorting happens in a small enough space to reduce the number of steps required but with enough space that several sorters can be working together. Space is designated and marked for specific purposes and useful labels and signs are clearly visible.

Crates are color-coded for the convenience of the libraries and the sorters as follows:

Grey: returns

Yellow: holds

Red: Central returns

Blue: new material

Black: discards

Grey and yellow crates are sorted by Sort Center staff. The yellow and grey crates can be mixed or pre-sorted for one library (as noted earlier). All libraries pre-sort returns for Central (red) and some pre-sort to other locations as well. The rest of the returns are a mix. Hold crates (grey) are more often a mix.

Delivery vehicles are appropriate for task but nearing maximum capacity

The delivery vehicles used are 15'-16' box trucks with room for 150 crates. Crates are easily moved in and out with a hand truck in stacks of 5. Each truck is equipped with a lift on the back of the trucks so drivers do not need to lift any crates. The Library has one truck for each route plus a spare.

The trucks are a good size for the work because they are spacious enough to carry a large number of crates without being too big to fit into available loading and parking areas at each library.

Each day, the delivery staff deliver between 150 and 400 crates. The number of incoming crates is slightly less. If the drivers were to load their trucks with the full day's volume each morning, they would be dangerously close to capacity (three trucks have room for 450 crates). However, each truck route includes a return to the Sort Center followed by a second trip to Central so there is an opportunity to unload picked up material and load the remaining Central items for delivery.

If the volume of delivery increases as predicted (36 crates per month or 108 crates per quarter), the volume of material moved by the delivery staff will require changes to the delivery service: additional routes (requiring another truck and driver), adding more loop backs to the Sort Center, or extending the hours that delivery runs (all runs are now completed by 3pm and 5pm except Sunday which runs 7am-11am).

Even if delivery volume stopped increasing, the delivery schedule will have to change to accommodate the two new libraries being built.

Sort Center space is too small for delivery and other tasks

While the Sort Center space has been optimized, it is still a tight fit especially considering the extra tasks assigned to the Sort Center (besides sorting). For example, a row of 10-15 book carts often lines one of the walls of the Sort Center. These book carts come from the Technical Services department. The role of the Sort Center is to scan each new item to trigger any necessary holds. Depending on what happens when the item is scanned, Sort Center staff will either pack the item for delivery to the owning library or for the appropriate pick-up location.

Items that trigger holds are incorporated into the next day's delivery but items that are new acquisitions do not necessarily get delivered right away. These items are stored on a separate range of shelves. Sort Center staff incorporate the new items into a library's delivery as soon as possible (depending on their workload and the library's ability to accept the additional material).

When the two new libraries come on line, the Sort Center will have to reconfigure their sort operation and the operation is likely to suffer because of the adjustments that will be necessary.

Sort Center staffed for average but not peak days

The Sort Center is now, or soon will be, understaffed. It routinely relies on additional hours provided by library pages to handle high volume days and peak periods such as post-holiday delivery days. In the first quarter of 2008, 7 of the 13 weeks required supplemental staffing in the Sort Center (on average, 4.5 additional hours were required in each of those 7 weeks).⁴⁹

⁴⁹ This information is based on the 2008 Sort Center summary (sort center stats-2008 cytd.xls) spreadsheet provided by Sort Center staff and since that time an additional .5 FTE has been added.

Delivery to libraries after closures sometimes exceeds library capacity

One of the problems with providing delivery six days a week rather than every day is that there are regular fluctuations that occur based on holds placed during closed hours. Library staff may gather material to fill holds on Sundays but at most libraries, the material is not picked up. Since Sort Center staff don't work on Sunday, none of the material picked up on Sunday is sorted.

On Monday, the Sunday holds that were picked up are sorted by Sort Center staff but won't be delivered until Tuesday. In addition, more material is picked up on Monday and much of this gets sorted by the sorting staff in time for the Tuesday delivery. As a result, all the libraries receive substantially more crates every Tuesday.

Twice in the first quarter of 2008, outgoing volume exceeded 400 crates – both times this marker was hit, it was a Tuesday. As noted, the capacity of three full trucks is 450 crates. Exceeding 400 outgoing crates in one day should serve as a warning sign that some real limits are approaching.

The limits may not be the trucks (because of the loop back to the Sort Center mentioned earlier); however, the libraries cannot handle so many crates in one day. For example, it is physically impossible to stack more than 55 crates in the North Portland backroom. And at maximum capacity, there is little room left for staff to move, much less to work efficiently.

Organization and Leadership

Limits of space and time and staffing affecting service to customers

It is clear that everyone involved with planning for or providing direct service to customers is very committed to their work; it is also clear that the limits of space, time, and staffing restrict the Library's ability to provide the best service possible.

For example, while it is desirable to have a diverse neighborhood library collection that addresses the community needs, the strength of the collection is lost if most people don't browse. Browsing the local collection is reduced when the shelves are too full, no books are displayed to entice browsers and the items are packed too tight to make the browsing process enjoyable. While 78% of the items circulating are checked out by browsers (versus people who have previously placed a request for the item), this number could be higher with more merchandizing and more displayed books.

And while it is true that the number of items moving through the delivery system indicate the library is well-used, it isn't necessarily a linear relationship to the success of the library. Excessive delivery can also be a sign that people are not finding what they want on the shelves, or are not able to adequately assess material via the catalog and are choosing to use the holds system instead of relying on their local library to address their needs.

Staff can only process so many items a day, have room for only so many crates in their backrooms and can fit only a limited number of items on their shelves before the system begins to break down. Ultimately, service to the customer suffers as items sit in crates in backrooms, crates are held at the Sort Center until they can be delivered, or the local collections get overcrowded with too much material but not the right material to satisfy their customers.

So, even though the Library provides very good service to its customers, there is still room for improvement when it comes to making the local collections more attractive.

Not accounting for / managing spikes

The generalized statement can be made that the Library, as a system, doesn't plan for peaks and spikes. Staffing, delivery schedules, and even Selections work with averages. As a result, when the peaks come, and they do come on a regular basis, the whole system is thrown off and struggles to catch up.

For example, hold queues are addressed but never quite resolved with enough additional copies. Hold requests are filled for customers but not in a very timely fashion because staff don't manage to pull the requested items, the crate gets left behind for lack of space, or the waiting list is too long.

New, popular material is continually being purchased but it doesn't always make it to the library shelves as it gets swept up into the holds frenzy. Staff occupy desks in public areas but are often busy working on materials handling backlogs so may not be finding time to plan programs or spend more time working directly with customers.

Ideally, staffing would take into account the real demands of library staff including the average and peak times so that the peaks didn't cause so many problems. Space should be allocated to account for the maximum crates that need to be stored in libraries or at the Sort Center. Work areas should be big enough to get all the work staged, processed and shelved each day – even on the busiest days.

Of course, accounting for these spikes requires difficult decisions: taking more public library space and allocating it to staff; limiting the number of holds a person can make, committing resources to well-weeded, properly-sized, and browser-oriented collections for each library, reducing hours the library is available to the public to ensure material is processed and ready for use when the library is open, or extending working hours for staff so that more work can be done before customers arrive.

Staffing allocation needs to be re-assessed

Staffing in the libraries is based on a formula that relies primarily on check-ins, check-outs, and holds, because the library has consistent data across the system on these activities. However, the amount of programming done in a library and other staff intensive activities may not be adequately accounted for, since they can be difficult to quantify.

For example, bilingual library clerks have additional demands placed on them and can't be as "productive" with materials handling as other staff. PC use and the support provided to public computer users is not accounted for in the formula despite the amount of work required to help users make PC reservations, print, and work with other library-provided applications.

Pages in libraries that have mobile computer labs or that do more programming have to spend more of their time moving furniture and equipment in the library meeting rooms. This leaves less time for check-in, shelving and other materials handling duties. Pages at Central also have a wide variety of tasks that aren't always accounted for (e.g. staffing call desks, helping with check-in and pulling holds, assisting with microfilm readers as well as print and reservation stations).

When the policy was changed to move DVDs and CDs behind the desk, no accommodation was made for how this affected staffing requirements despite the significant effort required for staff that now must do twice the amount of filing plus deal with more customers at check-out.

Not all staffing issues are a matter of “not enough.” In some libraries, staff were observed at circulation desks waiting for customers to need help checking material out while people in the backrooms struggled to catch up with delivery and bookdrop material. At Central, one person in Stacks sat by the bookdrop waiting for material to be returned so it could be immediately checked in. According to the Stacks Administrator, while it is important to constantly monitor the bookdrop material in order to get returned items checked in and off each patron’s account immediately, Stacks staff are instructed to perform other tasks when the stream of returns is not continuous (e.g. process damages, sort book trucks, retrieve and reshelve closed stacks items, sort branch items and holds, check-in return crates, communicate with staff assisting patrons.)

In some libraries, Reference staff work to support the circulation staff who are struggling to keep up with the volume (Albina) while at other libraries, the Reference staff seemed to take a more hands-off approach to the backlog of material that filled the backroom while they enjoyed a relatively quiet day out on the floor.

The issue of doing work that is “out-of-class” came up at several locations. It may be that the issue is one of reallocating positions at each library more than adding staff. As more material requires processing, additional page positions are required but perhaps fewer Reference staff can handle the workload in some locations.

Best Practices not being promulgated

Throughout the visits, different libraries were observed grappling with many of the same issues. However, the good ideas from one location didn’t necessarily get conveyed to other libraries. These good ideas, or Best Practices, can be shared in a top down approach in the form of procedural guidelines, shared informally among peers, or semi-formally distributed using a Task Force or SWAT team approach.

One possible vehicle for sharing informally among peers is via an Action Team. There are five Action Teams: Reference, Collections, HR, Public Services, Budget and IT. Most are composed of representatives from Administration along with staff working in multiple libraries. The Reference Action Team does not include line staff other than Reference staff.

The Library is good about documenting and sharing policies and procedures but often the implementation varies from library to library. While the idea of giving libraries leeway in how they handle some of the particulars of a task is appealing, too much of the hands-off approach sometimes leaves each library to recreate its own wheel.

Some of the good ideas observed over the course of this project are listed below. The Library might consider promulgating them in a more proactive manner:

1. Capitol Hill use of space and aisle integrity
2. Gresham's music shelving system
3. Hollywood's self check arrangement (although more surface space for customers is needed)
4. Woodstock's media labeling system
5. Albina's bottoms up shelving strategy (get things off the bottom shelf and display on the top)
6. Northwest's use of crates to catch bookdrop material
7. Hillsdale's back-to-back processing stations that share shelving carts
8. Central's stacks of crates on dollies

Volunteers make critical contribution to materials handling

Volunteers make a critical contribution to each neighborhood and regional library's operation. Volunteers shelve material, process holds, pull expired holds, fill holds, weed (for condition), look for items on the missing list, and perform other tasks related to materials handling. Reliance on volunteer staff to perform critical functions is a dangerous practice. Ideally, volunteers would be used to create additional opportunities for staff to address neglected but less critical work, but the without volunteers at MCL, shelving and checking in material would fall dangerously behind.

Another concern related to relying on volunteer for critical materials handling tasks is that they may not always be willing to do this sort of work. Studies show that Baby Boomers are increasingly looking for volunteer opportunities that leverage their skills and intellect and engage them in opportunities that are fulfilling and challenging.⁵⁰ It is not clear that the materials handling work currently available for volunteers would meet the requirements of many Baby Boomers starting to look for volunteer work that engages them and utilizes their professional skills.

⁵⁰ Fixler, J.F., Eichberg, S. Lorenz, G. Freedman, M. & Steinhorn, B. (2008). *Boomer volunteer engagement: Collaborate today, thrive tomorrow*. Bloomington, Ind: AuthorHouse.

Another drawback to relying so heavily on volunteers relates to work space. With work space already at a premium, it is difficult to find space for large number of volunteers who may only work a few hours a week, but still need space to operate. And finally, as staff workloads increase, there is less time to effectively support the needs of volunteers with training, supervision and recognition.

Issues with ILS

Numerous issues have been identified related to the library system, Millennium, including problems with how the holds are linked to an item (e.g. even when they are listed as missing), missing items are improperly counted when determining holds-copy ratios, and sometimes a hold is listed as available when it isn't really.

A problem that occurs several times a day, according to one library staff person, is that record-locks occur which prevent a customer from checking out an item. This happens because staff in the back are checking in an item at the same time that patron is trying to check-out new items.

In addition, the ILS doesn't provide some of the statistics the Library needs to make informed decisions. For example, historical data is unavailable that would be very helpful for examining the effects of new procedures (e.g. how many items are placed on hold before being checked out, and is this trend affected by policy X implemented 3 months ago?).

The inability of ILS administrators to easily access the underlying database (to extract data *owned* by the Library) through standard querying tools, poses significant restrictions on the Library's ability to evaluate its own operations. The Library is lucky to have a creative and skilled Systems staff that have developed creative ways to capture data which offer Library Administrators a way to understand much of what goes on system-wide.

Some of these issues are unique to Millennium and some are a function of using a proprietary ILS. Open Source ILS options are gaining momentum and this may be one way to effectively address some of the issues⁵¹.

Circulation policies need review

Prior to 2004/5, customers could check-out as many as 499 items at a time. They were allowed to renew items up to 99 times. In 2004/5, the check-out limit was reduced to 150 and the renewal limit reduced to 50.

⁵¹ The two main Open Source ILS products are Evergreen and Koha. Many libraries in the U.S. have moved to an Open Source ILS product so that they have more control over their data and can guide, if not participate in, development efforts.

In 2007/8, further restrictions were imposed for DVDs and CDs which were limited to a checkout limit of 15 each.

In 2004/5, the materials budget was \$5.88 million. In 2007/8, the materials budget was \$6.28 million.

Also in 2007/8, libraries are bursting at the seams with too much material in the backrooms as well as on the shelves; however, to reduce volume of new material coming into the system would result in too little variety and not enough current, popular material to satisfy demand.

Given that the Library is committed to keeping new material flowing and doesn't wish to reduce the materials budget, and the fact that there is more material than can fit on the shelf, it may be time to reconsider some of the restrictions put in place in 2004/5 and allow more of the material to stay in the customers' hands rather than stuck in crates waiting to be processed.

Role of Central Library Needs Clarification

The role of the Central Library is a complex and sometimes contentious issue. It is a government repository, an Oregon material archive, the "mother" library, repository of the single copy titles that are part of the collection, and it is a beautiful historical building that is the "heart of the Multnomah County Library System."⁵² It is also a neighborhood library trying to serve a demanding urban community.

In recent years, the number of visitors to the Central Library and circulation has gone down. At the same time, circulation and door count in the neighborhood libraries has gone up. One of the reasons for this is that customers no longer need to go to the Central Library to see Central Library holdings. All customers, regardless of their home library, have access to the entire MCL collection through the Library catalog and the holds system. Each neighborhood library offers access to the entire collection and also provides an important physical space. Each neighborhood library stands on its own in a way they couldn't before it became easy to request material for delivery to one's location branch, and to access reference materials on-line.

The community of the Central Library also relies on the physical space for public programming, exhibits, accessing government documents, using public computers, and browsing the popular library. The Children's Library includes a popular children's collection, story time area and children's programming.

⁵² Quote taken from the Library's own website at <http://www.multcolib.org/agcy/cen.html>.

In terms of community needs, the Central Library is like any other neighborhood library.

Where the Central Library differs from the neighborhood libraries is in its collection. It maintains a very large collection of publicly browse-able government documents, state, county, and regional historical material, a very large humanities collection, periodicals collection and science and business collection. In addition, the stacks provide a repository of archival material including historical and government documents.

The most popular areas of the Central Library are the smallest areas: Popular Library and Children's Library. Each of these two areas has a staff reference desk and a bank of public access computers. Like the neighborhood libraries, the popular collection is being encroached upon by the Holds Pickup shelving. Nearly a full wall of the Popular Library is dedicated to self-service holds. In addition, the Media Holds Desk, where people pick up the media associated with their on-hold DVDs and CDs is a large staffed desk in the lobby just outside the Popular Library.

In addition to the Media Holds Desk, there are also several self check-out machines and a large circulation desk in the lobby.

The least used part of the Central Library is the third floor where the Humanities Collection is shelved. This is also the largest part of the library. Also on the third floor is the Collins Gallery which is a beautiful exhibit area that is well used by the public. There are two reference desks on the third floor.

On the second floor is a large periodicals collection with a reference desk on one side. On the other side is the Science and Technology collection and another staff reference desk.

The Central Library renovation was completed in 1997 and the structure is beautiful. The renovation of the historic register building had to be completed according to guidelines for renovating buildings on the National Historic Register. However, the space is not well-suited to its function. The layout of the rooms makes it difficult to efficiently staff the spaces. There are six staffed reference desks (science and business, periodicals, children's, popular, and two in humanities) in public areas⁵³. Public computers are scattered throughout the library. The Children's and Popular Libraries are full of people using the space and browsing the collection, while the Humanities, Periodicals and government documents are rarely browsed although the computers located in these areas are always busy.

⁵³ There is one more reference desk in the government documents area but this is not currently staffed.

One of the trends in libraries across the United States is to dramatically decrease the amount of space taken up by books in the public areas in favor of more versatile spaces that can be used for programs, activities, and people. For example, it is common to find new urban libraries built with teen centers, computer labs, children's rooms, cafes, no-click zones for quiet reading, and maybe even a theater space.

The segmented spaces of the Central Library worked very well for libraries built in the 19th century but they pose challenges for the ways libraries are used today. MCL needs to make some hard decisions about the role of the Central Library so that the space can be modified to suit that role. In its current state, the Central Library is hobbled by the large collection spread throughout the public spaces, each of which is small and closed off from one another, making it difficult to provide spaces more suited to its role as a vibrant, public gathering place.