

Statement of David S. Mao
The Acting Librarian of Congress
Before the
Subcommittee on Legislative Branch Appropriations
United States Senate
Fiscal 2017 Budget Request
March 15, 2016

Madame Chairman, Ranking Member Schatz, and Members of the Subcommittee:

Thank you for the opportunity to provide testimony in support of the Library of Congress mission and its fiscal 2017 budget request.

The mission of the Library of Congress is to provide the Congress and the American people with a rich, diverse, and enduring source of knowledge that supports the Congress in fulfilling its constitutional duties and empowers America in its intellectual, creative, and civic endeavors.

For more than 215 years the Congress has sustained its library. With the largest collection of the world's recorded knowledge ever assembled by one institution, the Library holds over 162 million items including the world's largest collections of legal materials, films, sound recordings, and maps. The Library's staff have provided research and analysis to the Congress for more than 100 years through the Congressional Research Service (CRS) and for almost 200 years through the Law Library; and the Library has supported and protected U.S. creativity and innovation since it became the national home of the copyright function in 1870. Today, "The Library embodies key ideals on which this nation was founded: the right of a free people to have unfettered access to knowledge, the necessity for a productive people to have material incentives for innovation, and the need to preserve the record of our citizens' creativity."

I come before you today during a time of significant change and opportunity for the Library. As we prepare for new leadership for the first time in almost 29 years, our focus is on positioning the Library to serve the Congress and the American people in a future where change, driven in particular by technological advancement, occurs at an accelerating pace. Our fiscal 2017 budget request represents the beginning of a transformation and transition process for the Library. Looking across the Library's diverse mission areas, successful transformation to an infrastructure that can

accommodate this fast-moving environment will require increased capacity and capability in computing power, information technology, and unique human skills.

Storage space for our collections continues to be a high priority in this transition period. Beginning construction on a fifth preservation and storage module at Ft. Meade is a tremendous step forward, and the Library appreciates congressional support of the project. The Ft. Meade modules reduce deterioration of the Library's collections, provide for better access, and help alleviate an urgent situation with the management of physical materials. We are grateful for congressional funding and support in fiscal 2016 to start the design of modules 6 and 7, and for the support we received for our urgent physical collections management needs. Committed to our overall mission of distributing knowledge and information and preserving American heritage and culture, we take very seriously our duty as stewards of these precious resources and as servants of current and future generations.

Over the last year we implemented a major realignment that reconfigured the Library's organizational structure to meet accelerating demands. The Library's streamlined organization will set the conditions for providing comprehensive information technology planning and execution; centralizing management of key support functions to serve the Library's mission areas; consolidating management of digital and analog collections; and improving the support structure for staff. To enhance the Library's outreach efforts, we brought together under one organization the outward-facing activities and programs that were previously scattered throughout several Library units. They are the foundation for the new National and International Outreach service unit.

As part of the realignment and to support the new organizational structure, the Library made critical leadership appointments of a chief information officer and a chief operating officer to centralize oversight of and make more efficient the Library's information technology and operational infrastructure functions. Additionally, we appointed a director of the National and International Outreach service unit to spearhead oversight of the consolidated outreach activities, including collaborative efforts with other institutions.

To further prepare for transformation, the Library developed a Strategic Plan for 2016-2020. Released in October 2015, the plan sets forth primary strategies that are deliberately flexible in order to accommodate future needs as they evolve. Our commitment to the following seven strategies will provide the basis for comprehensive planning and programming to ensure the Library's transition to being a much stronger service provider.

- 1) Service: Deliver authoritative, authentic and nonpartisan research, analysis and information, first and foremost, to the Congress, to the federal government, and to the American people.
- 2) Collections: Acquire, describe, preserve, secure and provide access to a universal collection of knowledge and the record of America's creativity.
- 3) Creativity: Work with the U.S. Copyright Office to develop modernized copyrights systems and practices, in accordance with copyright laws and public objectives.
- 4) Collaboration: Stimulate and support research, innovation, and life-long learning through direct outreach and through national and global collaborations.
- 5) Empowerment: Empower the workforce for maximum performance.
- 6) Technology: Deploy a dynamic, state-of-the-industry technology infrastructure that follows best practices and standards.
- 7) Organizational structure: Organize and manage the Library to facilitate change and adopt new methods to fulfill its mission.

As the important work of the Library continues, demand for services grows. We therefore are taking aggressive action in this budget request to achieve much-needed transitional improvements, particularly in response to Government Accountability Office findings on the Library's management of information technology, as well as findings from several reports by the Library's Office of the Inspector General. We are dedicated to strengthening our information technology and physical infrastructure core that will significantly leverage the Library's capabilities and capacities.

For fiscal 2017, we ask for \$719.260 million, a 12 percent increase over our 2016 budget. Of this, 3.24 percent covers mandatory pay and price level increases (\$23.332 million). Moreover, \$13.098 million of the fiscal 2017 request will non-recur in fiscal 2018. The balance of the increase represents critical investments in three focus areas that will immediately advance the Library's capabilities across its diverse mission areas. It is a significant request that represents the beginning of modernization, transition, and risk reduction.

While complete transition cannot be accomplished in one year, the process for positioning the Library to adapt effectively to accelerating demand and advancing technologies requires that we first address the most urgent shortfalls in key infrastructure areas. These areas primarily include information technology, the care of and access to our digital and physical collections, and developing and maintaining the unique human skills needed to fulfill the Library's mission. Through several years of declining budgets, we compromised and took risks in these areas, often making difficult choices to cover mandatory costs that ensured current operations while sacrificing investment for the future. Absorbing mandatory pay and price level increases over these years further eroded the Library's buying power. Continually funding near-term operational demands at the expense of long-term investment has allowed some mission-critical areas, such as the data center/primary computing facility, to reach the point where they present serious risks.

The Congress remains the Library's primary client. Accordingly, our highest priority as an institution is to provide all Members and committees with authoritative, timely, and nonpartisan research and analysis, and information to support the legislative and oversight work of both houses of Congress.

CRS works constantly to position itself for the future by systematically anticipating congressional needs three years out. Meeting congressional needs in a multitude of areas, including those that cannot be anticipated, depends on CRS staff expertise. We request enhancements to analytic capacity in areas of high demand such as defense policy, and emerging issues such as technology policy. Because staffing in CRS has declined nearly 10 percent over five years of flat budgets, and senior experts' retirements continue steadily, support for these requests will help CRS maintain appropriate capabilities to offer effective responses to issues that become priorities on the congressional agenda. These are unique, not easily acquired, human skills required by CRS in order to process superior research products essential for decision making.

While filling human capital needs in CRS and other targeted areas is a major focus, addressing significant long-term information technology issues also is of high importance for the entire Library. IT infrastructure is the foundation for all of the Library's mission areas: a central IT operation supports everything from congress.gov and crs.gov to the copyright online registration system and collections that embody America's heritage and culture. IT is the backbone for much of the services the Library provides; it runs the online catalog, operates the Braille and Audio Reading Download (BARD) application for the blind and physically handicapped on mobile devices, and enables the Library to put online rare documents and images that cannot be found anywhere else in the world. While the demand for computing power continues to

increase, our current capacity is restricted and in dire need of modernization to ensure continued operations of essential services and to reduce risk.

Thus, a major focus of this budget is to modernize computing capability. We ask for the first year in a three-year investment to begin building a hosting environment for the Library's primary computing facility (PCF) away from Capitol Hill at the shared legislative branch hosting site. The root of many of the Library's IT challenges is the insufficient computing capability and capacity of the Madison Building primary data center. The current center is an Uptime Institute Tier I facility that lacks power or cooling redundancy. Library customers rightfully demand that the system is always "on," but our infrastructure struggles to keep pace. In 2008, for the first time, the PCF was shut down during the annual fire and safety check due to the deteriorating capability of the Uninterrupted Power Source (UPS) to pick up the load once Madison Building power was turned off. In August 2011 the PCF was shut down twice: once due to the August 23 earthquake, and again due to Hurricane Irene. Again the UPS was not trusted to pick up the load during a power loss. Last summer, we experienced a serious hardware failure and outage of Library systems—including a costly nine-day outage of the copyright registration system—when the PCF was shut down during the Architect of the Capitol's annual fire and safety check. Annual shutdowns are required because the generators are 35 years beyond their service life and are unable to pick up the full data center power demand during the required electrical power shutdown to the building. Currently, the demands of the Library's mission make it the biggest power draw on Capitol Hill. The PCF infrastructure is near capacity and carries a high risk of unplanned shutdowns. Moreover, it is not a matter of if, but *when* there will be a major mechanical failure—exclusive of the risk of a natural disaster or terrorist attack. In our opinion, it is imperative that the PCF be modernized, and preferably as part of the House data center initiative.

We therefore strongly recommend modernization as well as locating our primary computing facility away from Capitol Hill. The risks of remaining in the current aged and inadequate data center on Capitol Hill are significant. A modernized and remote PCF will greatly reduce risk, allow for double the capacity, and achieve Tier III capability, which Capitol Hill renovation alone will not. It is clear that additional capacity and modernization will greatly reduce the risk of shutdown under a multitude of circumstances.

The exposure of the Library's IT infrastructure to cybersecurity threats is another area of serious concern, and is one weakness identified by Government Accountability Office and Office of the Inspector General findings. The information and knowledge that the Library houses and distributes to customers in all mission areas is critical to the

nation and must be protected in order to reduce cyber-attack risks and ensure mission continuance. For these reasons, we also seek funding for IT security enhancements that will strengthen critical security protection of the Library's IT network and resources as cyber threats continue to grow exponentially.

The Library's pace of digital collecting surpasses current collection infrastructure capabilities and is another area of concern. For example, the Library's web archives are three times larger than they were in 2010, with the amount of harvested content increasing by an average of 32 percent each year during this period. The expansion rate of digital collections now rivals that of physical collections. We are currently at capacity and request funding for a digital collections management unit to collect and manage content for the Library's digital format collections. The unit will work closely with the chief information officer to collect, preserve, and deliver digital collections. It will assume responsibility for key born-digital acquisitions programs and digital materials not supported elsewhere in the Library and will provide significantly leveraged capacity and capability needed to manage the explosion of content in this area.

The Integrated Library System (ILS) is a mission-critical enterprise Library system that integrates major operational functions through the use of a common bibliographic database. The ILS supports the acquisitions, cataloging, circulation, and loan of Library material and provides online public access to Library collection metadata. The Library's requirements have evolved substantially since the system was installed in 1999. Because the current system cannot accommodate all of our electronic resource-management needs, the Library must operate several smaller ILS systems. We request funding to examine the business needs not currently supported in the ILS in order to develop requirements for the next-generation system which will electronically manage the Library's collection and provide discovery and delivery of the Library's collections to users worldwide. This investment will enhance the Library's capability to access and deliver critical material across all mission areas. We seek this funding in order to plan responsibly for the replacement of a core system.

One of the seven strategies in the Library's strategic plan for 2016-2020 is support for the U.S. Copyright Office in its efforts to develop modernized copyright systems and practices. For example, one reason for the request to move the PCF away from the Washington, D.C. area is to ensure against another outage of the copyright registration system like the one experienced last summer. Well-developed and flexible information technology systems are critical to the administration of a modern Copyright Office. The Library's systems are supporting the Copyright Office's efforts to improve internal operations and better meet customer needs.

In support of the Copyright Office's modernization efforts, we request programmatic increases to address critical staffing needs, ongoing efforts to make historic records searchable, data planning and management, and essential upgrades to software and hardware. Seventy-two percent of the request would come from fee revenue and prior year unobligated funds.

Finally, the Law Library has urgent collections needs to strengthen current and future service to congressional and other clients. We seek funding for a seven-year project to complete classification of the Law Library's multi-national legal collection of current and historic legislative documents, as well as primary and secondary sources of American, foreign, and international law. The collection is not fully classified according to the Library's own classification schedule. The Law Library must depend for access on staff members with many years of experience and specialized knowledge of where the materials are located. Reclassification and re-shelving of approximately 367,000 volumes will provide better service to Members of Congress and the general public through faster retrieval of requested volumes.

Current and future access to some of the Law Library collections depends on the replacement of compact shelving in storage areas. Initially supplied by a company now defunct, the compact shelving was retrofitted 15 years ago with a hand-crank system, operated by bicycle chains. The retrofit solution is failing and in some instances staff cannot fit carts or ladders—or themselves—into aisles to retrieve or re-shelve books. The estimated lifespan of the compact shelving was estimated to be 25 years; the shelving is now 30 years old. The situation presents serious staff safety issues, makes some collection items inaccessible, and takes some storage space out of service.

To sum up, much has changed since the Library put key infrastructure into place in the 1990s and early 2000s. Technology has advanced, congressional and public demands have changed, and some infrastructure has become outdated. The Library's budget request, which represents transition and transformation, aims to position the Library for the future. We laid the groundwork with a realignment and new strategic plan for 2016-2020. To avoid mortgaging the future by continuing to support infrastructure that cannot handle current and future demands, we must make long-term investments that move us forward in the most economical way, and also bring in new expertise.

We are mindful that the Library is an integrated institution. The Law Library, for example, obtains materials through copyright deposit, depends on the Library's IT services, and works closely with Library Services staff. All units in the Library—the

Congressional Research Service, the U.S. Copyright Office, the Law Library, Library Services, National and International Outreach—are increasingly interdependent in accomplishing their missions. We are collaborating in new and better ways to ensure we make the best use of our resources.

Our future service to the Congress and the American people depends on having a modernized infrastructure—an infrastructure that is good, lasting and right.

Madame Chairman, Ranking Member Schatz, and Members of the Subcommittee, the Library is both America's first federal cultural institution and part of the innovative infrastructure of America. I thank you again for your support of the Library and for your consideration of our fiscal 2017 request.