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101 Independence Ave, SE  
Washington, DC 20540

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From: "Schornagel, Karl"

Date: Sep 6, 2013 5:42:45 PM

Subject: RE: inquiry regarding Bicameral Task Force Response from LOC OIG

Per your request.

Karl Schornagel  
Inspector General

101 Independence Avenue, S.E.  
Washington, D.C. 20540-1060



**THE LIBRARY OF CONGRESS**

WASHINGTON, D.C. 20540-1060

April 16, 2013

OFFICE OF THE  
INSPECTOR GENERAL

The Honorable Henry A. Waxman  
Bicameral Task Force on Climate Change  
Ranking Member  
Committee on Energy & Commerce  
U.S. House of Representatives  
Washington, D.C. 20515

The Honorable Sheldon Whitehouse  
Bicameral Task Force on Climate Change  
Chairman, Subcommittee on Oversight,  
Committee on Environment and Public  
Works  
U.S. Senate  
Washington, D.C. 20510

The Honorable Edward J. Markey  
Bicameral Task Force on Climate Change  
Ranking Member  
Committee on Natural Resources  
U.S. House of Representatives  
Washington, D.C. 20515

The Honorable Benjamin L. Cardin  
Bicameral Task Force on Climate Change  
Chairman  
Subcommittee on Water and Wildlife,  
Committee on Environment and Public  
Works  
U.S. Senate  
Washington, D.C. 20510

Dear Co-Chairs:

This responds to your letter of February 25, 2013, requesting my office's assessment of the Library of Congress' ("Library") efforts to address the increasing threat of climate change. As part of discussions with your staff, my office was asked to first identify the existing requirements in legislation, regulation, executive order, and other directives that apply to the Library.

The Library's Office of the General Counsel stated that the majority of the authorities noted by the Bicameral Task Force do not directly apply to the Library because the Library is not part of executive branch; the authorities either direct specific entities to undertake initiatives to reduce energy consumption and pollution or are a result of Executive Orders. Moreover, due to the statutory allocation of responsibilities over Library buildings, those authorities that apply to Library buildings generally fall under the Architect of the Capitol's responsibility, rather than the Library. The Office of the General Counsel stated that Executive Orders apply to the Library only if the Library adopts them as policy as part of Library of Congress Regulations, and there are no Library of Congress Regulations that adopt any climate change Executive Orders. We

have attached to this letter the Office of the General Counsel's response to our request for applicable authorities related to the task force's focus. Furthermore, the Office of the General Counsel stated that to the extent activities performed by Library staff in fulfillment of the Library's mission generate heat trapping pollution, the Library is bound by the authorities of Title 42 of the U.S. Code; those sections within Title 42 that relate to the Library is also attached to this letter.

The Library's mission is to support the Congress in fulfilling its constitutional duties and to further the progress of knowledge and creativity for the benefit of the American people. The Library's collection contains the single largest and most comprehensive collection in many formats including books, maps, movies, and sound recordings. Consequently, the Library has several unique needs for the preservation of its materials that may impact energy consumption.

Preservation of certain Library materials requires appropriate temperature and relative humidity; different formats have different ideal temperatures and humidity set points. Several Library facilities contribute square footage of "cold" storage<sup>1</sup> as well as "cool" storage.<sup>2</sup> Although the Library is progressing with its goal of digitizing its materials, the Library has an extensive collection of items in analog formats requiring different preservation needs that require cold storage. Nevertheless, the Library should use energy efficiently.

In this regard, we issued a recent report and made recommendations that may effect the Library's energy consumption. In March 2013, we issued a report on the Library's server efficiency and cloud computing to determine whether the Library efficiently uses its current information technology servers and has taken steps to evaluate the feasibility of using cloud computing. If every organization were to replace its private data center with cloud computing, this may result in less overall power consumption, carbon emissions, and physical land use. We found that the Library does not collect and maintain the data needed to make informed management assessments regarding its information technology infrastructure. Consequently, the Library cannot readily identify potential areas for server consolidation or areas where optimization or cloud computing alternatives can be used. The lack of further progress in its server consolidation minimizes potential savings from reduced energy, hardware, and maintenance costs. We recommended that the Library collect the data to make informed assessments of its infrastructure and create an enterprise-wide plan to guide management decisions on migrating to cloud-based solutions and the return on investment/cost savings to be achieved.

In addition, in July 2009 we performed an audit survey, limited to the Library's three Capitol Hill complex buildings, to assess energy conservation at the Library and evaluate the Library's and the Architect of the Capitol's (AOC) efforts to reduce energy consumption, emissions of pollutants, and greenhouse gases. Based on the results of our survey, we determined that the Library and AOC are taking appropriate steps to reduce the Library's energy consumption. We recommended that the Library undertake more

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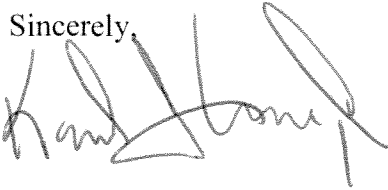
<sup>1</sup> An environment, roughly, as low as -4 degrees Fahrenheit with a relative humidity of 40%

<sup>2</sup> An environment, roughly, of 50 degrees Fahrenheit with relative humidity between 35% to 50%

initiatives to increase awareness among Library staff of the importance of energy conservation and recycling programs. The Library is currently addressing these initiatives, and we have attached a listing of the Library's and the AOC's programs, accomplishments, and efforts supporting energy conservation and sustainability within the Library.

If you have any questions, or we can be of further assistance, please do not hesitate to call me at (202) 707-2637.

Sincerely,

A handwritten signature in black ink, appearing to read 'Karl W. Schornagel', written in a cursive style.

Karl W. Schornagel  
Inspector General

Attachments

cc: Architect of the Capitol Inspector General

## MEMORANDUM

DATE March 7, 2013

TO Karl Schornagel, Inspector General  
Kurt Hyde, Assistant Inspector General

VIA *for* Elizabeth Pugh, General Counsel *[Signature]*

FROM Meredith Skowronski, Assistant General Counsel *MS*

SUBJECT Authorities – Bicameral Task Force on Climate Change

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This memorandum responds to your request for legal authorities applicable to your office's assessment of the Library of Congress' ("Library") efforts to address the increasing threat of climate change as directed by the Congress. We understand that one objective of this assessment is the scope of the Library's authorities to reduce emissions of heat-trapping pollution.

Because the majority of the initiatives relating to climate change direct specific entities to undertake initiatives to reduce energy consumption and pollution or are a result of Executive Orders, the majority of the authorities noted by the Bicameral Task Force do not directly apply to the Library. Moreover, due to the statutory allocation of responsibilities over Library buildings, those authorities that apply to Library buildings generally fall under the responsibility of the Architect of the Capitol rather than the Library. Thus, this memorandum discusses the various responsibilities for Library buildings and grounds as well as references additional authorities that may be relevant to your assessment, although possibly only indirectly related to the Library's impact on the environment, and specific initiatives that the Library has undertaken in response to energy conservation concerns.

### Authority Over Library Buildings and Grounds

The provisions of 2 U.S.C. § 141 allocate work relating to the Library's buildings and grounds between the Librarian of Congress and the Architect of the Capitol ("AOC"). Specifically, the allocation provides that the AOC controls work on structural and architectural matters involving the Library buildings, 2 U.S.C. § 141(a)(1)(A) and (C), mechanical, electrical, plumbing and elevator systems, 2 U.S.C. § 141(a)(1)(B), and compliance with building codes and related laws. 2 U.S.C. § 141(a)(1)(D). Thus, statutory authorities mandating "green" construction standards or relating to core structural, architectural, systemic, or code requirements will fall under the purview of the AOC and not the Library.

Pursuant to 2 U.S.C. § 141a, the U.S. Capitol Police have responsibility for the design, installation, and maintenance of security systems for the physical security of the Library buildings on Capitol Hill. And while collections security matters remain under the Librarian's control, the Librarian must coordinate with and obtain approval from the Capitol Police on the design and operation of collections security systems. 2 U.S.C. § 141b.

The Librarian maintains control over all other logistical, safety, and environmental health aspects relating to the Library buildings and has delegated authority in these areas to the Office of Integrated Support Services ("ISS"). See Library of Congress Regulation ("LCR") 211-13, "Functions and Organization of Integrated Support Services, Office of the Librarian." ISS handles all facility matters relating to Library furnishings and equipment. In addition, ISS is responsible for the logistics of leases of other Library buildings. Although the Library has no independent authority to lease property, ISS coordinates with the General Services Administration ("GSA") or the Architect of the Capitol for leases of property as necessary. See 40 U.S.C. § 585 (authorizing GSA to enter into lease agreements on behalf of the federal government); 41 C.F.R. ch. 102, subch. C. (providing the GSA policies regarding leases of real property on behalf of agencies); and 2 U.S.C. § 1819 (authorizing the AOC to lease space for computer backup facilities for legislative branch entities). Accordingly, statutory mandates relating to Federal leased property would fall under the purview of GSA or AOC, because those entities enter into the lease agreements with the owners of the properties. Only to the extent a requirement flows down to the Library as specified in an interagency agreement between the Library and GSA or AOC does the Library assume responsibility for energy efficiency or other environmental requirements applicable to the leasing of space. See e.g., 42 U.S.C. § 17061(11) (defining "GSA facility" as including properties leased by GSA for purposes of energy savings in buildings).

Executive Orders mandating standards for agency energy consumption are not applicable to the Library; however, to the extent ISS has control over internal fixtures and equipment, it has instituted an energy-reduction policy in Library buildings. See ISS staff web site at <http://staff.loc.gov/sites/iss/its-easy-being-green/> (describing the reduction of lighting and equipment usage on specified "green" days).

Finally, it may be relevant, albeit indirectly, to your assessment that ISS retains responsibility for other Library environmental initiatives. See e.g., Consolidated Appropriations Act, 2010, Pub. L. 111-117 (Dec. 16, 2009) at section 706 (authorizing agencies to have a recycling program).

### **Transportation Matters**

The Library utilizes the GSA Fleet Service contract for the lease of certain Library vehicles; therefore, limitations relating to the procurement or use of alternative fuel vehicles or fuel efficiencies that otherwise are not applicable to the Library may be realized through the interagency arrangement with GSA. See 41 C.F.R. part 101-39.

In addition, the Library's Human Resources Services office administers the Library's transit benefit program that authorizes the payment of certain subsidies to promote the use of mass transit to reduce pollution. See 5 U.S.C. § 7905 and note; 26 U.S.C. § 132.

### **Contracting Matters**

Pursuant to LCR 2110, "Procurement – Supplies and Services," the Library adopted the Federal Acquisition Regulations ("FAR"). Consequently, 48 C.F.R. part 23 is applicable to Library procurements in so far as it implements standards to address environmental factors, energy and water efficiency, and other technological or safety innovations for new procurements.

### **Miscellaneous Matters**

Pursuant to 2 U.S.C. § 166, the Congressional Research Service is tasked with providing non-partisan research assistance to Congress, which may include specific reports or analyses regarding policy or legal implications pertaining to climate change.



## AUTHORITIES FOR ASSESSMENT RELATING TO CLIMATE CHANGE

### Statutes Applicable to the Library of Congress

- 2 U.S.C. § 141 Allocation of responsibility for Library buildings and grounds
- 2 U.S.C. § 141a. Design, installation, and maintenance of security systems; transfer of responsibility
- 2 U.S.C. § 141b. Collections, physical security, control, and preservation of order and decorum within the library
- 2 U.S.C. § 166 Congressional Research Service
- 2 U.S.C. § 1819 Computer backup facilities for legislative offices
- 5 U.S.C. § 7905 Transit subsidy
- 26 U.S.C. § 132(f) Fringe benefits
- 42 U.S.C. § 6202 Energy conservation (defining "person" as including "the government and any agency of the United States" as well as defining "Federal land" as "all lands owned or controlled by the United States")  
But see subchapter III, part D, limiting applicability of Federal Conservation Measures to the Executives agencies (§ 6361(d)) or specified agencies not including the Library (§ 6362(a)).
- 42 U.S.C. ch. 82 Solid Waste Disposal
- 42 U.S.C. ch. 85 Air Pollution Prevention and Control (defining "person" at § 7605 as including "any agency, department, or instrumentality of the United States and any officer, agent, or employee thereof")
- 42 U.S.C. §§ 8241-8244 National Energy Conservation Policy – Demonstration of Solar Heating and Cooling in Federal Buildings (defining "agency" by cross-reference to 5 U.S.C. § 5721, which includes the Library)
- 42 U.S.C. § 8259b. Federal procurement of energy efficient products (defining agency by cross-reference to 5 U.S.C. § 7902, which includes the Library)
- 42 U.S.C. §§ 8287-8287d Energy savings performance contracts

## Library of Congress Regulations

- LCR 211-13 Functions and Organization of Integrated Support Services, Office of the Librarian
- LCR 1613 Use of Library of Congress Motor Vehicles and Other Local Transportation Services in Connection with Official Business
- LCR 1810-3 Building Services, Maintenance and Repairs
- LCR 1817-1 Safety and Environmental Health Programs of the Library of Congress
- LCR 2110 Procurement – Supplies and Services (adopting the FAR)

## Other

### General Services Administration Regulations

41 C.F.R. ch. 102, subch. C. Leases of Buildings

41 C.F.R. part 101-39 Fleet Services Program

### Federal Acquisition Regulations

48 C.F.R. part 23

### ISS Policy

Energy Conservation: Gold Days and Green Days, available at <http://staff.loc.gov/sites/iss/its-easy-being-green/>

### AOC Policy

Greening the Capitol Initiative to conserve energy on Capitol Hill, available at [www.aoc.gov/sustainability.cfm](http://www.aoc.gov/sustainability.cfm)

## Non-Binding Statutory, Regulatory, or Other Authorities

42 U.S.C. § 13212 Minimum federal fleet requirement (providing a list of covered entities under the definition of “Federal fleet” that includes “executive agencies, independent establishments, and the Congress” but not specifically including the Library)

But see § 13212 (f)(1)(A) (excluding the legislative branch from the definition of “Federal agency” for purposes of the vehicle emission requirements)

42 U.S.C. § 15801, et seq.

But see 15852 (providing goals for use of renewable energy by the “Federal Government”)

42 U.S.C. § 17001, et seq.

But see, 42 U.S.C § 17061(8) (defining “Federal facility” as any building “constructed, renovated, leased, or purchased in part or in whole for use by the Federal Government.”)

And although 42 U.S.C. § 17112 (establishing a program to review data center efficiency and development of best practices) is not applicable to the Library, the House of Representatives, Office of the Chief Administrative Officer, has established a contract (# OPC1200033) for analysis of legislative branch data centers and directed the Library to issue a task order against that contract, which it did in 2012. See Library of Congress Task Order #ITS12T0057.

Executive Orders mandating standards for agency energy consumption are not applicable to the Library.

See e.g., Executive Order 13514, “Federal leadership in Environmental, Energy, and Economic Performance” and Executive Order 13423, “Strengthening Federal Environmental, Energy, and Transportation Management.”

## Authorities of Title 42 of the U.S. Code that the Library Is Bound By

To the extent activities performed by Library staff in fulfillment of the Library's mission generate heat trapping pollution; the Library is bound by the authorities of Title 42 of the U.S. Code. To the Library's General Counsel's knowledge, all of those relate in some way to the reduction of heat trapping pollution.

- 42 U.S.C. ch. 82 -- compliance with requirements relating to appropriate disposal of solid waste, which also includes directions relating to the procurement of products with the highest percentage recyclable materials possible.
  - The Congressional findings at section 6901 note that inadequate prior actions to dispose of solid waste created greater amounts of air and water pollution.
  - An example of this is that certain preservation techniques or activities may require use of hazardous chemicals, result in the separation of certain hazardous materials from waste water streams, or otherwise require appropriate disposal of hazardous waste. The Library's recycling efforts and compliance with the solid waste disposal authorities, therefore, help to reduce heat-trapping pollution.
  
- Clean Air Act, 42 U.S.C. ch. 85 (or §7401, et seq.) -- establishing a nation-wide law to limit certain air pollutants, although primarily targeted towards development of state standards for regulation of certain industrial areas (e.g., motor vehicles, aircrafts, chemical plants, utility companies)
  - To the extent that the CAA mandates pollution control requirements on the facilities themselves (e.g., installation of pollution and emission control devices, obtaining emission permits, or development of risk management plans), then that responsibility would fall under the purview of the AOC.
  
- 42 U.S.C. §§ 8241-8244 -- requirements relating to conservation policy
  - Again, while applicable to Library buildings, the use of solar heating, cooling or equipment would fall under the purview of the AOC. An example is that the AOC has documented the use of a vegetation roof for the NAVCC that reduced the urban heat island effect in accordance with the AOC's adoption of the Energy Policy Act of 2005 and Energy Independence and Security Act of 2007. See Architect of the Capitol, [A Legacy of Sustainability: FY 2011 Annual Sustainability, Energy, and Water Conservation Report](#), available at <http://www.aoc.gov/sustainability-energy-and-water-conservation-report>.
  
- 42 U.S.C. § 8259b -- requirements relating to energy efficient products
  - The procurement of more energy efficient products would benefit the overall goal of achieving greater resilience against climate change, even if

### **Authorities of Title 42 of the U.S. Code that the Library Is Bound By**

indirectly, through the purpose as stated in section 8252 to promote the use of renewable resources.

- 42 U.S.C. §§ 8287-8287d -- requirements relating to energy savings contracts

**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

**Library Programs:** Below are the Library of Congress' (Library) Greening and Sustainability Initiatives as provided by the Library's Office of Support Operations. These initiatives were started in 2012 with a charter to identify processes, projects and programs supporting energy conservation and sustainability management within the Library. Subgroups formed include Energy Reduction, Recycling, Products, Policies/Practices, and Ad-Hoc for special initiatives.

**Initiatives the Library is addressing include:**

Initiative	Description	Current Processes/ Comments
<b>Trash Removal Contract</b>	New procurement initiative underway to implement a Waste to Energy (WTE) trash contract for Capitol Hill facilities (contract will include the hauling of organic matter to a composting facility).	<b>Current processes:</b> separate trash to maximize recycling streams and include the hauling of pulped materials from food services for composting. <b>Comments:</b> Anticipated award June 2013.
<b>Recycling</b>	New procurement initiative underway to implement a revenue sharing contract for Capitol Hill facilities contract will include the salvage of over 31 recyclable materials to be collected.	<b>Current processes implemented in 1992:</b> under U.S. General Services Administration (GSA) guidelines separates recycling at the dock for paper, bottles and cans, and toner cartridges for our current recycling streams.  <b>Comments:</b> Anticipated award June 2013.  <b>Accomplishments:</b> In FY12, the Library rolled out 152 new three-compartment containers for office spaces and 54 three-compartment containers for all public spaces to maximize collections.

**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

Initiative	Description	Current Processes/ Comments
		<p>Launched a battery recycling program in FY12 to capture universal waste battery disposal.</p> <p>In 2012 the Library recycled over 276 tons of paper.</p> <p>Earnings from the recycling program support employee wellness; in 2012 the Library earned over \$22K.</p>
<p><b>Food Services Contract</b></p>	<p>Food service offers initiatives such as a re-usable coffee mug to reduce waste stream.</p> <p>Replacement equipment incorporates green technology such as new fryers which filter oil to reduce waste; used fryer oil is also recycled as fuel.</p>	<p><b>Current Processes:</b> Vendor currently uses compostable products and recycled content containers. Bio-degradable waste is pulped and hauled to a composting facility by the trash vendor. Vendor produce supplier provides locally grown products when available.</p> <p><b>Accomplishments:</b> Recent Food Service remodeling projects included LED lighting in Madison 6th Floor Café included occupancy sensing technology and lighting controls to utilize “daylight harvesting”, reducing the luminary intensity when daylight from the south window wall provides sufficient brightness.</p>
<p><b>Custodial Services Contract</b></p>		<p><b>Current Processes:</b> Vendor currently uses environmentally preferred</p>

**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

Initiative	Description	Current Processes/ Comments
		<p>"green" products. Paper products used in the custodial services are made from recycled content.</p>
<p><b>Library Operations Initiatives</b></p>	<p>Introduction of a new process through GSA allows the "sale" of excess equipment to other entities.</p> <p>The Library's Asset Control Team manages the E-Waste program through the disposal of electronic equipment through a Memorandum of Understanding with UNICOR.</p> <p>Integrated Support Services (ISS)/Automation team manages the Library's Computers for Learning donation program which are cleaned and made available for schools.</p> <p>The Library's Asset Control Team manages the E-Waste program through the disposal of electronic equipment through a Memorandum of Understanding with UNICOR.</p> <p>During the Design phase for facility projects, the Library encourages its</p>	<p><b>Accomplishments:</b></p> <p>Implemented the "Quick Copy" program which streamlines the process for small, routine jobs and eliminated the need to send them to administrative copiers.</p> <p>Successful launch of the networked copier program that allowed a cross section of Library offices to use the full functionality of office multi-functional devices (MFDs) including print from desktop and scan-to-email.</p> <p>In FY12, "Reduce, Reuse, Recycle" paradigm reused over 1900 pieces of office furniture and saved customers approximately \$500K.</p> <p>Implemented the "Quick Copy" program which streamlines the process for small, routine jobs and eliminated the need to send them to administrative copiers.</p>



**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

Initiative	Description	Current Processes/ Comments
	customers to reuse office furniture under the "Reduce, Reuse, Recycle" paradigm.	
		<p><b>Comments:</b> (In-Process Initiatives) The Library is evaluating the Green Products Database created by the Energy Star program for compatibility with the facility project planning process. The Green Products Database is a tool for procuring "green" goods and services under categories such as "Building Interiors", "Building Finishes", and "Building Construction."</p> <p>The records management process is undergoing a re-engineering and once disposition is approved, service units will begin the purge process with the anticipation of tons of paper available for recycling.</p>
<p><b>Architect of the Capitol (AOC) Initiatives (coordinated by a division within the Library)</b></p>	<p>The Library partners with the AOC Library Buildings and Grounds for multiple initiatives which are underway to reduce energy consumption to comply with the Energy Independence and Security</p>	<p><b>Accomplishments:</b> Implemented program for using occupancy sensors to turn off lighting in unoccupied areas of the rare book stacks, replacement of some HVAC controls to better match systems output with demand thus eliminating overheating and</p>

**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

Initiative	Description	Current Processes/ Comments
	Act of 2007.	overcooling, Green Day and Gold Day programs were implemented to reduce hallway lighting, reduce elevator and escalator usage, and reduce HVAC fan speeds on certain building air handlers.  <b>Comments:</b> These are discussed in detail under the AOC section.
<b>Other Initiatives</b>		
Earth Day Celebrations	Conducted yearly to highlight Library and AOC Library Buildings and Ground Initiatives, structured to include informational vendor booths, recycling games, and an office supply re-use swap, and distribution of recycling containers.	<b>Comments:</b> Scheduled for April 2013.
"Ask Alvin" custodial informational format	Communication tool for recycling initiatives and Q&A from staff.	<b>Comments:</b> Established in FY12.
Ad-Hoc "Green Team"	Promotes interaction at the office level corporate social responsibility and generates interest in the recycling and sustainability programs from a grass roots perspective.	<b>Comments:</b> Established in FY12.
Services handouts	Informs customers and promote programs.	<b>Comments:</b> Developed in FY12
Library is a member of the	Monitors energy	

**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

Initiative	Description	Current Processes/ Comments
CAO Council Green Buildings and Processes Working Group	conservation and greening initiatives.	
Through the International Association of Museum Facility Administrators (IAMFA) Facility Services	Conducts an annual facility benchmarking for world class cultural institutions to identify best industry practices.	
ISS Parking Program office	Supports the use of public transportation and ride-sharing where practical.	<b>Comments:</b> For example, the program supports the Washington Area Bicyclist Association to promote a "Bike to Work Day."

**Accomplishments Related to the Library as Reported by the Architect of the Capitol (AOC)**

The Architect of the Capitol (AOC) is legislatively required to comply with the Energy Policy Act (EPACT) of 2005 and the Energy Independence and Security Act (EISA) of 2007 to achieve a 30% energy reduction by 2015 in comparison to our 2003 baseline energy usage. The Library Buildings is estimated to contribute approximately 3% to AOC overall energy reduction in FY12. Library Building Grounds anticipates a similar contribution in FY13.

- The Library Buildings and Grounds Jurisdiction has reduced electrical consumption by more than 4.5% (and an estimated 1.5% reduction in steam and chilled water usage) between FY11 and FY12.
- Although not formalized, AOC has participated in the Library's quarterly forums, a Union Presidents Meeting, Earth Day events, PAO Announcements on Green Day and on the initial meetings to establish the Library's Sustainability Working Group. The intent of this involvement is to educate the building occupants and increase awareness of how their work habits affect energy use.
- Additionally, Library Building Grounds has an onsite engineer serving as the energy manager whose overall goal is to reduce energy consumption while minimizing impact to clients and collections.

**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

- With the implementation of the Operations and Maintenance procedures listed below, it is estimated they accounted for 67% of the overall Library Buildings energy reduction in FY12. The Superintendent of the Architect of the Capitol, Library Buildings and Grounds (LBG), estimates that the projects account for 33% of the overall Library Buildings energy reductions.

Name of Operation and Maintenance Procedure	Description of Operation and Maintenance Procedure
Green Day	AOC/LBG worked closely with the Library to establish a "Green Day" initiative where best practices are implemented to reduce energy consumption. These efforts include Hall way lighting reduction and securing certain elevators and escalators. These practices are implemented every Friday.
Gold Day	A standardized response to reduce peak electrical demand during intense heat and humidity. These curtailments are enacted for a very specific time frame and include hallway and other lighting reductions, escalators and elevators taken out of service, and air handling unit fan speed reductions.
Nightly Shutdowns	Certain Air Handling units are shut down during unoccupied times. Hallway lights are reduced to night illumination levels one hour early now programmed for 9:30PM daily. Office lights are reduced at 8:15 PM daily, two hours earlier. Lighting levels are reduced on Sundays.
Energy Audits	Energy audits and simulation models have been completed on all LBG buildings.
Retro-commissioning: a process that seeks	Completed on Adams and Jefferson

**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

Name of Operation and Maintenance Procedure	Description of Operation and Maintenance Procedure
to improve how building equipment and systems function together for a more efficient operation.	Buildings. Thirty air handling units in the Madison building are undergoing retro commissioning.
Water Balance	Hot and chilled water systems have been rebalanced in the Madison Building to match building requirements to usage.
Steam Reduction	The LBG has implemented a procedure to reduce steam energy usage on the weekends. The secondary hot water loop temperatures are reduced in the Madison Building when forecast temperatures exceed a certain threshold.

**Projects:**

Name of Project	Description of Project
Energy Meters	Included with the AOC wide utility metering project, the Library now has thermal and electric energy meters to quantify the energy consumption of the buildings. Part of this effort included a Utility Metering Enterprise System (UMES) which is a tool to analyze energy usage.
The Madison 6 <sup>th</sup> Floor cafeteria	The lighting system was renovated to including the replacement of fluorescent lights with energy efficient LED lights. The new control system takes advantage of natural light to minimize artificial light production. Other features include occupancy sensors and astronomical time schedules. The new system is estimated to

**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

Name of Project	Description of Project
	reduce yearly energy consumption by 68% for the new cafeteria.
Motion Sensors within Book Stacks	A pilot program was initiated to install motion sensors in the Rare Books Stacks. The system turns the lights on when staff enters the space and extinguishes them when no longer needed. A second advantage is the damaging light exposure on the collections is minimized.
Re-lamping Program	LBG continues to replace inefficient 30 watt fluorescent tubes with more energy efficient 25 watt fluorescent. Approximately 25,000 lamps have been replaced for an estimated annual saving of \$75K.
Variable Frequency Drives	13 non-serviceable Variable Frequency Drives are scheduled for replacement in FY13 with an estimated potential of \$195K in energy savings.
Building Automation System	The Building Automation Systems (BAS) in the Adams Building and the Jefferson Building have been converted from an outdated, legacy STAEFA system to the new BASnet system. Work continues, to convert the BAS network in the Madison Building.

**Library of Congress and Architect of the Capitol's Programs, Accomplishments, and Efforts Supporting Energy Conservation and Sustainability Within the Library**

**Future Projects (Not Yet Implemented)**

<p>Madison Data Center Infrastructure Upgrades</p>	<p>The AOC awarded a design contract to upgrade the HVAC system that supply's cooling to the Data Center. The new design allows for a higher chilled water supply temperature which may allow the CPP to raise the chilled water distribution temperature. The new design also improves the overall air flow distribution. Currently this project is in the FY14 budget request.</p>
<p>Upgrade the two largest air handing units</p>	<p>A design contract was awarded to upgrade the two largest Air Handling Units in the LBG buildings. This design includes the replacement of the pneumatic control system with Direct Digital Controls and allows for cooling coil by-pass operations when environmental conditions permit. This project was identified in the Adams energy audit and the annual energy savings is estimated at \$400,000.</p>
<p>Madison DDC upgrade</p>	<p>Supported an FY13 and FY14 budget request for phase 1 and 2 to upgrade the HVAC pneumatic control system to Direct Digital Controls. This project is estimated to save \$650K annually.</p>
<p>ESPC</p>	<p>Investigating the use of an Energy Savings Performances Contract Vehicle at the Library of Congress.</p>