

**U.S. General Services Administration**

**FY 2011-2016 Strategic Sustainability Performance Plan**

**Contents**

**Section 1: GSA Policy and Strategy ..... 2**

- 1.1 Agency Policy Statement ..... 2
- 1.2 Sustainability and the Agency Mission ..... 3
- 1.3 Greenhouse Gas Reduction Goals ..... 5
- 1.4 Plan Implementation ..... 6
- 1.5 Evaluating Return on Investment ..... 10
- 1.6 Transparency ..... 12

**Section 2: GSA Performance Review and Annual Update..... 13**

- 2.1 Summary of Accomplishments..... 13
- 2.2 Goal Performance Review ..... 14
  - 2.2.1 Goal 1: Scope 1 & 2 Greenhouse Gas (GHG) Reduction..... 14
  - 2.2.2 Goal 2: Scope 3 GHG Reduction and Agency GHG Inventory ..... 22
  - 2.2.3 Goal 3: Sustainable Design, Green Buildings, and Local Planning ..... 28
  - 2.2.4 Goal 4: Water Use Efficiency and Management..... 35
  - 2.2.5 Goal 5: Pollution Prevention and Waste Reduction ..... 38
  - 2.2.6 Goal 6: Sustainable Acquisition ..... 43
  - 2.2.7 Goal 7: Electronic Stewardship and Data Centers ..... 46
  - 2.2.8 Goal 8: Agency Innovation and Government-Wide Support..... 50

**Section 3: Agency Self Evaluation..... 54**

- Appendix 1: Agency Climate Change Adaptation Policy Statement ..... 56
- Appendix 2: Responses to Climate Change Adaptation Guidance Questions ..... 59
- Appendix 3: Draft Agency Energy and Sustainability Scorecard ..... 65

## Section 1: GSA Policy and Strategy

### 1.1 Agency Policy Statement

The U.S. General Services Administration (GSA) is committed to achieving President Obama's sustainability agenda. GSA will achieve a Zero Environmental Footprint (ZEF): it will eliminate its own impact on the natural environment, and use its government-wide influence to reduce the environmental impact of the Federal government.

Pursuit of the ZEF goal will improve agency environmental performance by increasing productivity, effectiveness and efficiency as well as eliminating waste and redundancy in all agency operations. The ZEF goal focuses limited agency resources and galvanizes the GSA workforce to champion innovation, streamline business processes, and deliver hyper-efficient and effective services that are valued by customer agencies. GSA will help deliver a government that works better by developing and sharing culture and policies of performance, innovation, and management discipline across Government.

GSA will design net-zero buildings that produce as much energy as they consume or more, which will remove building dependence on the electrical grid and allow for sustained operations in an emergency. GSA will reduce the carbon emissions generated in the production and delivery of the products and services GSA acquires which will make the government's supply chain more resilient against resource shortages or supply disruptions. GSA efforts to conserve energy will drive the development of innovative practices and technologies that will accelerate the Nation's transition to a clean-energy economy.

GSA also will deliver meaningful economic benefits as it pursues ZEF. GSA will reduce waste and make more effective use of the government assets it manages, including increased use of Federal buildings through workspace design innovation, mobile work promotion, and disposition of excess and underutilized buildings and leases. GSA will drive down the costs of operating and maintaining Federal buildings and motor vehicle fleets by pursuing sustainable design, lifecycle costing of potential investments, and fuel-efficient technologies and asset management practices.

GSA has set ambitious targets for improving environmental, social, and economic sustainability, increasing GSA efficiency and effectiveness, and delivering benefits that resonate across Government. The FY 2011 Strategic Sustainability Performance Plan highlights GSA priorities and significant efforts for the coming years as we continue our journey to ZEF.

  
Martha Johnson  
Administrator

  
Stephen Leeds  
Senior Sustainability Officer

## 1.2 Sustainability and the Agency Mission

*GSA's mission is to use expertise to provide innovative solutions for our customers in support of their missions and by so doing foster an effective, sustainable, and transparent Government for the American people.*

The GSA mission statement recognizes the convergence of opportunity, capability and responsibility to provide comprehensive solutions to Federal agencies to allow them to achieve their missions. GSA is the central agency for acquiring products, services, and workspace for the Federal government. GSA provides office space to over one million Federal employees in over 9,600 Federal buildings and leases, and offers over 12 million products and services to other Federal agencies. GSA plays a key role in developing and implementing administrative policies that affect all government agencies and is a leader in developing citizen-driven information and services and citizen engagement tools. GSA is funded primarily by reimbursements from other Federal agencies for the goods and services that GSA provides. In FY 2010, GSA had a business volume of \$64 billion, representing over 14 percent of the Government's total procurement spending.

GSA's broad reach over the acquisition, management, and disposal of Federal assets provides a unique opportunity to influence the environmental performance of the entire Government. GSA has expertise and a history of leadership in green government and has demonstrated its capability to deliver significant improvements in its own environmental performance. Most importantly, GSA recognizes that it has a responsibility to increase the sustainability and efficiency of the Federal government by reducing the environmental impact of its buildings, products, and services, as well as its processes and activities.

GSA must excel in each of its three strategic goals of Innovation, Customer Intimacy, and Operational Excellence in order to fulfill the needs of its customers and fulfill its mission.

- *Innovation.* GSA will be a green proving ground that demonstrates the viability of new green technology and practices. GSA will test innovative solutions in its own operations and offer those solutions to other agencies through its government-wide contracting and policy-making authorities.
- *Customer Intimacy.* GSA will lead with its expertise to drive the market for high-performance green products, services, and solutions that support its customer agencies' missions and meet or exceed their sustainability goals. GSA will develop strategic partnerships with industry and with other Federal agencies to develop new and innovative tools for more effective Government.
- *Operational Excellence.* GSA strives for performance excellence, continuous improvement, and the elimination of waste in all of its operations. GSA will consider the environmental needs of present and future generations in all operational and business decision-making.

Table 1: Agency Summary Table

The following table provides a summary of key statistics that describe the size and scope of GSA operations as of September 30, 2010.

Total number of employees	12,827
Total acres of land managed	144,978
Total number of government-owned facilities operated by GSA	1,530
Total number of private-sector facilities leased by GSA <sup>1</sup>	8,094
Total Gross Square Feet (GSF) of space owned and leased by GSA <sup>1</sup>	414 million
Number of locations throughout the U.S.	9,354
Number of locations outside of the U.S.	0
Total number of motor vehicles used for GSA-internal operations <sup>2</sup>	1,225
Total number of motor vehicles exempt from reporting requirements <sup>3</sup>	302
Total FY 2010 operating budget	\$26.6 billion
Total number of contracts awarded in FY 2010 <sup>4</sup>	817,728
Total face value of contracts awarded in FY 2010 <sup>4</sup>	\$13.5 billion
Total amount spent on energy consumed in FY 2010	\$440 million
Total energy consumed in British Thermal Units per GSF in FY 2010 <sup>1,5</sup>	64,804 BTU/GSF
Total gallons of water consumed per GSF in FY 2010 <sup>1,6</sup>	14.1 gallons/GSF
Total Scope 1&2 GHG emissions in FY 2008 baseline (in metric tons of carbon dioxide equivalents)	2,270,645
Total Scope 3 GHG emissions in FY 2008 baseline (in metric tons of carbon dioxide equivalents)	156,676

<sup>1</sup> GSA estimates of energy consumption, water consumption, and GHG emissions do not include energy and water consumed in leased facilities where utility costs are included in lease payments to the lessor. These "full-service" leases represent 460 of the 8,094 leased facilities and 25.1 million of the 414 million total gross square feet.

<sup>2</sup> In FY 2010, GSA owned 213,642 motor vehicles which it leased to other Federal agencies. Other agencies include emissions from those vehicles in their GHG emissions inventories and reduction goals. GSA GHG emissions data only include 1,225 motor vehicles used for GSA-internal operations.

<sup>3</sup> GSA operates 302 motor vehicles that have waivers from the use of alternative fuels. These vehicles are exempted because they are located more than 5 miles or a 15 minute drive away from an available source of alternative fuel.

<sup>4</sup> This figure includes all contract actions performed by GSA in FY 2010, including those using other agencies' funds.

<sup>5</sup> A British thermal unit (BTU) is the amount of energy required to heat one pound of water by one degree Fahrenheit, and is a standard unit of measure used to describe the energy content of fuel or the power of heating and cooling equipment. In FY 2010, GSA consumed 18.9 trillion BTUs of energy in the 212 million square feet of owned and leased space where GSA pays utility bills directly to utility providers.

<sup>6</sup> In FY 2010, GSA consumed 2.4 billion gallons of water in the 173 million square feet of owned and leased space where GSA pays water utility bills directly to utility providers.

### 1.3 Greenhouse Gas Reduction Goals

By FY 2020, GSA will reduce its annual greenhouse gas (GHG) emissions by 27 percent from its FY 2008 levels. GSA will reduce its GHG emissions from sources owned or controlled by GSA, including fuel consumed on-site to heat or power Federal buildings and fuel consumed by motor vehicles (“Scope 1” emissions) and GHG emissions resulting from the generation of electricity, heat, or steam that is purchased by GSA (“Scope 2” emissions) by 28.7 percent by FY 2020. GSA will also reduce its GHG emissions from indirect sources (“Scope 3” emissions), including employee commuting and business travel, contracted solid waste disposal, wastewater treatment, and transmission losses from purchased electricity, by 14.6 percent by FY 2020.

In FY 2008, GSA generated an estimated 2.4 million metric tons of carbon dioxide. By FY 2020, GSA will shrink its GHG emissions to 1.75 million metric tons of carbon dioxide. Ninety-eight percent of GSA’s GHG emissions come from energy consumption in Federal buildings and leased space. GSA’s overall strategy to reduce its GHG emissions focuses on increasing energy efficiency and maximizing space utilization in its Federal buildings and leases:

- GSA will concentrate investment in energy and water conservation projects across its inventory of owned Federal buildings to reduce facility energy intensity from 76,865 BTU/GSF in FY 2003 (baseline year) to 48,926 BTU/GSF by FY 2020. Energy intensity is measured as the average energy consumed in British thermal units (BTU) per gross square foot (GSF) of space.
- GSA will design all new Federal buildings to deliver energy performance at least 30 percent below industry standards for energy efficiency in non-residential buildings, achieve the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) Gold certification, and meet Energy Star standards.

GSA is investing funds provided in the American Recovery and Reinvestment Act of 2009 to increase the energy efficiency of its Federal buildings and meet aggressive targets for GHG emissions reductions. GSA Recovery Act funds included \$4.5 billion for green building modernizations as well as small and limited scope projects to improve energy efficiency and increase on-site renewable energy generation at GSA Federal buildings. GSA is using Recovery Act funds in over 500 green building projects across the country; once complete, these projects are expected to reduce GSA GHG emissions by over 300,000 metric tons of carbon dioxide per year.

GSA also received \$300 million in Recovery Act funds to replace motor vehicles in the Federal fleet with new, more efficient vehicles. GSA acquired 17,246 new vehicles, including 3,141 hybrid-electric vehicles, to replace the oldest and least efficient vehicles in the Federal fleet. GSA estimates that these vehicles will reduce Federal petroleum consumption by 7.7 million gallons over their lifetimes and will reduce the government’s Scope 1 GHG emissions from mobile sources by over 68,000 metric tons of carbon dioxide.

## 1.4 Plan Implementation

Beginning in FY 2011, GSA is using a new Sustainability Management System (SMS) to ensure the effective implementation of Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, and related laws and regulations. GSA uses information from the GSA SMS, a higher-tier Environmental Management System (EMS), that establishes agency-wide policy, set goals and targets, evaluate progress, and coordinate the activities of lower-tier EMS' in GSA organizations, facilities, and environmental impact areas. Lower-tier EMS' are responsible for implementing environmental action plans and achieving environmental goals within specific GSA operations or at specific GSA facilities.

The GSA SMS is based on the elements and framework of the International Standard Organization's standard number 14001, *Environmental Management Systems*. In FY 2010, GSA reviewed its existing management and environmental management systems to identify gaps between current practices and ISO 14001 standards. GSA modified existing management systems for planning, budgeting, and internal controls to incorporate sustainability and focus management attention on GSA's environmental performance. As a result, GSA management processes are synchronized around agency environmental goals and sustainability is fully embedded in GSA operations and mission.

### 1.4.1 Leadership

In FY 2010, GSA established a Sustainability Steering Committee (SSC) to provide continuous executive attention to GSA environmental performance goals and targets. In FY 2011, the SSC was formally chartered and incorporated into GSA's broader governance structure. The SSC is chaired by the Agency Senior Sustainability Officer and includes senior executives from across GSA programs and geographic regions. The SSC reports to the GSA Senior Management Team, which is the highest management council in GSA, and operates under their guidance and direction. Together, the SSC and the GSA Senior Management Team provide governance over the GSA Sustainability Management System and use the SMS to ensure accountability for meeting GSA sustainability goals and objectives.

The SSC meets bi-weekly to track progress against agency environmental goals, to consider new and emerging issues, and to coordinate sustainability activities across GSA organizations and regions. The SSC oversees the development of the annual Strategic Sustainability Performance Plan, and ensures that GSA environmental policies are documented, implemented, and maintained. The SSC uses the annual Sustainability Plan development process to ensure that GSA sustainability goals and targets are meaningful, aggressive, and drive improvements in agency environmental performance. The SSC is the governance body that maintains the GSA SMS and conducts periodic management reviews to ensure the SMS continues to be suitable, adequate, and effective.

### 1.4.2 Policy, Planning, and Budget Integration and Alignment

In FY 2011, GSA modified its annual planning and budget process, called the Performance Management Process (PMP), to embed sustainability into agency planning and resource allocations. The GSA PMP is a structured process to develop strategies, identify actions, and align resources to support agency priorities. The PMP allows leaders at all levels to: establish goals and objectives; develop strategies and planned actions to meet those goals;

monitor status and progress against goals; and review and update plans against actual performance. The PMP ensures that GSA plans, policies, and budget are integrated, aligned, and focused on the highest priorities of the agency.

In FY 2011, GSA added environmental impact assessments to its annual strategic planning activities. These assessments identify the environmental impacts of GSA programs and activities that contribute to agency sustainability goals. The results were compiled to create an agency-wide inventory of environmental impacts and an objective framework to assess the environmental impacts of GSA programs.

GSA also prepared Strategy and Action Plans for each Sustainability Plan goal area. The Strategy and Action Plan requires leaders to identify actions necessary to achieve agency goals and objectives. In FY 2011, GSA prepared separate Strategy and Action Plans for each of the eight goals in the Sustainability Plan, to identify management actions, challenges, risks, and resources required to meet agency environmental goals and targets. The resulting Strategy and Action Plans were used to update the GSA Sustainability Plan and to develop the GSA FY 2013 budget request.

Finally, GSA included the environmental impacts of proposed investments in Executive Business Cases (EBC) used by GSA to select initiatives for the budget request. GSA added sustainability factors to EBC requirements, including impacts on energy and water consumption and greenhouse gas emissions, to expand decision criteria beyond return-on-investment and pay-back period.

#### 1.4.3 Agency Collaboration and Communication

The GSA Sustainability Steering Committee (SSC) coordinates internal communications and dissemination of the Sustainability Plan and GSA environmental policy across the agency. The SSC coordinates the activities of sustainability councils in GSA organizations and in each of GSA's 11 regions. This network of Councils ensures that GSA sustainability policies and goals are communicated quickly and accurately throughout the agency, and also provides a vehicle to collect ideas and insights from the field.

SSC also communicates sustainability information to GSA employees through an intranet site that provides information on sustainability initiatives in every GSA region, lists upcoming events related to GSA sustainability goals, and provides tools and articles to help employees perform their duties in a more environmentally sustainable way. The intranet site engages the GSA workforce in agency sustainability goals by providing a forum for employees to share their ideas and experiences through blogs, dialogues, and other collaboration tools.

GSA communicates agency sustainability policies, goals, and activities to other Federal agencies, industry, and the public through its external web site, [www.gsa.gov/sustainability](http://www.gsa.gov/sustainability). The GSA sustainability page provides customer Federal agencies with direct access to sustainable products and services, and best practices in sustainable asset management. The page also provides regular updates on GSA sustainability initiatives and includes a link to GSA's Strategic Sustainability Performance Plan.

#### 1.4.4 Methods for Evaluating Progress

In FY 2011, GSA redesigned its process for quarterly performance reviews of agency programs and goals. GSA deployed a web-based dashboard tool to report performance in key agency performance measures compared to planned performance for the period, summarize performance highlights and milestones over the previous period, and assess the likelihood of meeting the annual performance target. Each quarter, the GSA Chief Operating Officer and Performance Improvement Officer review agency performance and assign corrective actions for measures that are not meeting targets or milestones.

GSA includes sustainability goals and targets in the performance dashboard and in quarterly performance reviews. The quarterly performance review process evaluates agency progress against sustainability objectives and ensures accountability for GSA environmental performance through achievement of sustainability goals.

#### 1.4.5 Methods for Ensuring Accountability

In FY 2011, GSA incorporated the eight goals of the Strategic Sustainability Performance Plan into its Management Control Improvement Program (“internal controls”). As a part of the GSA internal control program, each GSA management program must regularly review and report its program activities, control objectives, risks, and control techniques. The CFO provides independent reviews of program self-assessments and works with program officials to improve management controls where needed. When internal control reviews identify improvement areas that cannot be improved immediately, the programs are required to prepare corrective action plans.

In addition, GSA executives and managers must complete annual assurance statements, verifying the overall adequacy and effectiveness of financial, operational, and compliance internal controls in their program areas. The results of internal control reviews and the assurance statements are presented to the Management Controls Oversight Council (MCOC), chaired by the GSA Deputy Administrator. The MCOC produces an annual assurance statement verifying the design, effectiveness, and documentation of all agency internal controls.

GSA has established eight new management programs in the internal controls program, representing each of the goal areas in the Sustainability Plan. GSA incorporated the sustainability goals in its internal controls program to ensure appropriate documentation on agency sustainability activities, risks, and internal controls and to provide for the continuous review of sustainability goal areas to identify and correct non-conformance with standards. The internal controls program also provides for multiple levels of management review and assurance that management controls are in place and effective. GSA is conducting the first internal reviews of its sustainability measures. These reviews are focused on verifying and validating the data collection processes, underlying data and calculations, and reported values used to assess progress towards sustainability goals. The reviews are being conducted by the CFO in coordination with the Sustainability Plan goal leads.



Table 2: Critical Planning Coordination

The following table illustrates the relationship between GSA’s Sustainability Plan and other agency plans and reports. Each cell responds “Yes” or “No” to indicate whether the sustainability goal has been integrated into a specific report or plan. An “N/A” response indicates that the goal is not applicable to the subject report or plan.

Originating Report or Plan	Scope 1 & 2 GHG Reduction	Scope 3 GHG Reduction	Agency Comprehensive GHG Inventory	Sustainable Design / Green Buildings	Regional and Local Planning	Water Use Efficiency and Management	Pollution Prevention and Waste Elimination	Sustainable Acquisition	Electronic Stewardship and Data Centers	Agency Innovation
<i>OMB Circular A-11, Preparation, Submission and Execution of the Budget:</i>										
GPRA Strategic Plan	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Budget Justification	yes	yes	yes	yes	no	no	yes	yes	yes	yes
Exhibit 53s	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Exhibit 300s	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<i>Capital Asset Management Plans and Reports:</i>										
Data Center Consolidation Plan	yes	yes	yes	n/a	n/a	n/a	yes	n/a	yes	yes
<i>Energy and Environmental Performance Reports:</i>										
Annual Energy Data Report	yes	yes	yes	n/a	n/a	yes	n/a	n/a	n/a	n/a
Annual Federal Fleet Report	yes	n/a	yes	n/a	n/a	n/a	n/a	yes	no	no
EISA Section 432 Reports	yes	yes	yes	n/a	n/a	yes	n/a	n/a	n/a	n/a
Environmental Management System	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
OMB Energy Scorecard	yes	yes	yes	yes	n/a	yes	n/a	n/a	n/a	n/a
OMB Environmental Scorecard	n/a	n/a	n/a	yes	n/a	n/a	yes	yes	yes	yes
Instructions for Implementing Climate Change Adaptation Planning	yes	yes	yes	yes	yes	yes	yes	yes	no	yes

## 1.5 Evaluating Return on Investment

GSA has government-wide responsibility and authority for the acquisition, management, and disposal of a wide variety of Federal assets. GSA maintains multiple investment decision-making processes to accommodate different statutory and regulatory requirements, stakeholder interests, and customer expectations. GSA's programs and activities routinely incorporate return on investment into asset planning, acquisition, and disposal decisions.

GSA bases its investment decisions on customer mission requirements, financial return, and social and environmental policies. GSA identifies investments based on customer needs, prioritizes investments based on financial benefits, and selects investments that conform to or maximize social or environmental benefits.

- *Economic Life Cycle Cost.* GSA investment decisions and asset management plans consider life cycle costs and financial return over the life of the investment. GSA is financed primarily from reimbursements from other agencies, and GSA must ensure that its rates and fees include the full costs of asset acquisition, operations and maintenance, and disposal. GSA routinely conducts life cycle cost analysis to compare alternative approaches or technologies, and to select the solution with the lowest overall cost of ownership, consistent with quality standards and customer requirements. GSA is both a steward of taxpayer dollars and a competitor in the marketplace and recognizes that adopting solutions with lower life cycle costs will generate savings for customers, which makes GSA more competitive.
- *Mission-Specific Costs and Benefits.* GSA's primary consideration in its business decision-making is the mission requirements of its customer Federal agencies. GSA is committed to meeting customer requirements within GSA sustainability goals and objectives. GSA is actively working to improve sustainable technologies and increase sustainable options for customers to better align customer mission requirements with GSA and customer agency sustainability goals.
- *Environmental Costs and Benefits.* GSA considers the environmental impacts of its business decisions and incorporates sustainability goals in its investment decision-making processes. In many cases, GSA has established minimum standards that all potential investments must meet. For example, all new Federal building construction projects will be designed to achieve LEED Gold certification, to be at least 30 percent more energy efficient than industry standards, and to meet Energy Star standards. In other cases, such as small energy and water savings projects, potential projects are ranked based on financial return, estimated energy or water savings, and potential GHG emissions reductions.
- *Operations & Maintenance and Deferred Investments.* GSA is investing in technologies and management practices that will reduce lifetime O&M costs in its buildings portfolio. GSA will ensure that every building subject to EISA section 432 is retro-commissioned once every four years so as to ensure building equipment is operating efficiently. GSA also relies on LEED Existing Buildings: Operations and Management (EBOM) certification to manage building efficiency and reduce operation and maintenance costs.
- *Social Costs and Benefits.* GSA routinely includes social factors in its business decision-making. GSA considers local economic conditions when evaluating sites for new Federal buildings and leases, and often selects locations where a large Federal presence will

stimulate new economic development. GSA supports the economic growth of small and disadvantaged businesses through set-asides on certain procurements and by structuring long-term service contracts to ensure that small businesses can compete.

- *Climate Change Risk and Vulnerability.* GSA will consider potential climate change impacts when undertaking long-term planning and making decisions affecting GSA resources, programs, policies and operations. GSA will develop and publish an agency-wide Climate Adaptation Plan by June 2012 and update it regularly. The Plan will identify and prioritize actions and establish a mechanism to evaluate progress and continue to improve GSA's capacity to effectively adapt to current and future changes in the climate. In constructing the Plan, GSA will review programs, operations, policies and authorities to identify potential long term impacts of climate change and prioritize investments that will increase operational resiliency in the face of greater climate risk.

## 1.6 Transparency

GSA promotes continuous and open communications with employees, customers, suppliers, stakeholder organizations, and the public. GSA communicates agency efforts and progress to all GSA employees through a sustainability intranet site that allows employees to provide feedback and ideas to improve GSA environmental performance.

GSA communicates with the public primarily through the agency website, [www.gsa.gov/sustainability](http://www.gsa.gov/sustainability). GSA provided the Strategic Sustainability Performance Plan on the website and posted its 2010 GHG Inventory on [www.data.gov](http://www.data.gov). GSA also includes information on agency environmental performance in its annual performance reports, including its Congressional Budget Justification, Annual Performance Plan, and Annual Financial Report. In addition, GSA reached out to the private sector, non-governmental organizations, and academia in an effort to gather new ideas and commentary on existing initiatives.

In FY 2011, GSA launched the GreenGov Supply Chain Partnership program to work collaboratively with vendors and contractors to increase the energy efficiency of their supply chain, reduce their greenhouse gas (GHG) emissions and help build a clean energy economy. The GreenGov Partnership provides a forum for government and industry to share information and best practices on greenhouse gas inventory and energy reduction plan completion. GSA will also use the GreenGov Partnership to include vendors in GSA efforts to develop a system for Federal contractors to report their GHG emissions to the government. GSA is working with the EPA to help 72 small businesses complete their first GHG inventories, and it will use feedback provided from these businesses to help other small businesses complete GHG inventories and join the GreenGov Supply Chain Partnership.

## Section 2: GSA Performance Review and Annual Update

### 2.1 Summary of Accomplishments

GSA demonstrated significant progress in meeting its sustainability goals in FY 2010, achieving a green score for all of the measures included in the FY 2010 OMB Sustainability and Energy Scorecard. GSA continued to deliver new tools and solutions to help other Federal agencies meet their sustainability goals. The success stories below represent examples of GSA innovation in sustainability.

- *GSA is using Recovery Act funds to reduce purchased energy consumption in GSA-owned Federal buildings.* GSA has over 500 active building projects funded by the Recovery Act that are delivering significant improvements to GSA environmental performance.
  - GSA is installing on-site energy generation technology at 89 buildings across the country. GSA is installing 65 photovoltaic arrays, which it expects to generate over 33,000 megawatt hours worth of energy annually, or enough to power 3,000 homes for one year. Other projects include 33 solar hot water systems, eight geothermal systems, two wind energy projects, one biogas project, and one biomass project.
  - GSA is improving building exterior features to increase energy efficiency in 259 projects, including 137 roof replacement projects, 43 projects to improve building façades, and 79 window upgrades. Improvements to a building's roof and exterior help improve the efficiency of the building's heating and cooling system.
  - GSA is investing in energy-efficient lighting technology to reduce building energy consumption in 277 projects, including 188 interior lighting upgrades and 89 exterior lighting upgrades. Lighting is a significant source of energy consumption in office space, and lighting upgrades can reduce the amount of electricity a building uses.
- *GSA is reducing petroleum consumption in the Federal motor vehicles fleet.* GSA purchased 5,603 hybrid-electric passenger vehicles in FY 2010, doubling the number of hybrids in the Federal fleet. This investment is expected to reduce Federal fuel consumption by an estimated 7.7 million gallons over the life of the vehicles.
- *GSA is consolidating its government-wide conferences and investing in alternatives to travel to reduce Federal GHG emissions from business travel.* In FY 2011, GSA consolidated two annual conferences, GSA Expo and Network Services, into a single event. Joint location reduced travel costs and GHG emissions for agencies that send representatives to both annual conferences. GSA also deployed virtual meeting centers, which reduce Federal agency travel needs by providing high-quality teleconferencing capabilities.
- *GSA is helping to reduce Federal IT spending and energy consumption by improving access to cloud-based solutions.* In FY 2010, GSA awarded a blanket purchase agreement for Infrastructure-as-a-Service solutions, including cloud data storage and virtual machines. In FY 2011, GSA issued a request for quotation to begin the process of securing a five-year, \$2.5 billion government-wide contract for cloud-based e-mail, electronic records management, and office automation services. Cloud computing reduces GHG emissions by moving internal IT services to more energy-efficient data centers that are shared by multiple organizations.

## 2.2 Goal Performance Review

### 2.2.1 Goal 1: Scope 1 & 2 Greenhouse Gas (GHG) Reduction

**By FY 2020, GSA will reduce Scope 1 and 2 Greenhouse Gas (GHG) emissions 28.7 percent below FY 2008 levels.** In FY 2008, GSA produced an estimated 2.27 million metric tons of carbon dioxide from direct (Scope 1 and 2) sources. GSA must reduce annual Scope 1 and 2 GHG emissions by nearly 652,000 metric tons of carbon dioxide to meet its FY 2020 emissions reduction target.

GSA Scope 1 and 2 GHG emissions are generated by sources owned or controlled by GSA, including fuel consumed on-site to heat or power Federal buildings and fuel consumed by GSA motor vehicles (“Scope 1” emissions) and GHG emissions resulting from the generation of electricity, heat, chilled water, or steam purchased by GSA (“Scope 2” emissions). GSA has adopted different strategies for reducing the GHG emissions of buildings and motor vehicles. Each emissions source is discussed below.

#### 2.2.1.1 Scope 1 & 2 Greenhouse Gas Emissions in Federal Buildings

- a. *Goal Description.* **By FY 2020, GSA will reduce Scope 1 and 2 GHG emissions from GSA Federal buildings by 28.7 percent below FY 2008 levels.** Also by FY 2020, GSA will reduce total energy consumption per square foot of space by 37.5 percent compared to FY 2003 levels for buildings subject to statutory energy intensity reduction goals, and will increase renewable energy production and procurement to 30 percent of annual energy consumption.

*Goal Scope.* GSA targets for buildings emissions include GSA-owned buildings and those leases where GSA is responsible for making utility payments directly to utility providers. GSA targets do not include leased space where utilities are provided by the landlord and included in the lease payment. GSA energy intensity reduction targets also do not include credits for the purchase of renewable energy generated by others.

- b. *Agency Lead for Goal.*

Mark Ewing  
Director, Energy Division  
Public Buildings Service

- c. *Implementation Methods.*

1. **By FY 2020, GSA will reduce facility energy intensity by 37.5 percent below FY 2003 levels.** GSA will meet the requirements of section 431 of the Energy Independence and Security Act of 2007 (“EISA 2007”, Public Law 110-140) by reducing energy consumption per gross square foot of space by 30 percent by FY 2015. GSA will reduce facility energy intensity by an additional 1.5 percentage points per year from FY 2016 through FY 2020.

- a. **GSA will reduce facility energy intensity by designing new buildings and major building renovations to exceed industry standards for energy efficiency.**
- GSA designs all new construction projects to deliver energy performance at least 30 percent below ASHRAE standard 90.1 (2007). The American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) prepares voluntary, consensus-based standards for design, testing, and use of building systems. ASHRAE standard 90.1 provides minimum energy standards for commercial buildings.
  - In FY 2011, GSA started designing all new buildings and major building renovations to achieve the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Gold certification (except in highly-secure areas where LEED standards may conflict with security requirements) and meet Energy Star standards.
  - GSA will design all major building modernization projects to consume energy at a level no more than the average BTU/GSF for comparable GSA facilities in the same geographic region. GSA sets targets based on regional averages because benchmarking against a national average would create a less aggressive standard for some parts of the country.
  - The Department of Energy reports that the national average energy intensity in commercial buildings was 89,800 BTU/GSF in 2003. By comparison, GSA energy intensity in 2003 was 76,865 BTU/GSF and the 12-month average energy intensity in GSA buildings through March 2011 was 69,652 BTU/GSF.
- b. **GSA will reduce facility energy intensity by investing in limited-scope projects to improve energy efficiency of buildings and building systems.** GSA prioritizes its existing buildings by environmental and financial performance and actively develops project proposals to implement life-cycle cost effective energy saving measures. GSA prioritizes project proposals as a part of the annual budget process and selects projects based on financial return on investment, estimated energy savings per dollar invested, and anticipated reductions to GHG emissions.
- c. **GSA will reduce facility energy intensity by conducting Energy and Water Evaluations**, as required by EISA section 432, and will ensure that all covered buildings are retro-commissioned once every four years. Retro-commissioning is a systematic investigative process to ensure that all building equipment operates efficiently as a system. GSA operates 198 "covered buildings" under EISA that represent 75 percent of GSA total energy usage. GSA is using Recovery Act funds to retro-commission 82 of its covered facilities in FY 2011.
- d. **GSA will install advanced electricity meters in all covered buildings and all Recovery Act projects by FY 2012 and expand the advanced metering program to measure natural gas and steam usage by FY 2016.** Advanced utility meters provide real-time energy consumption data to building operators. Operators can use the data to adjust building conditions to reduce peak demand or identify and correct sub-optimal performance.

2. **GSA will increase renewable electricity production and procurement to 30 percent of annual electricity consumption by FY 2020.** GSA will increase renewable electricity production and procurement to 15 percent of total agency-wide electricity usage by FY 2013 and up to 30 percent of annual electricity consumption by FY 2020.

GSA includes renewable energy requirements in its electricity purchase contracts with local utility companies and contracts specifically for renewable energy. GSA is expanding its inventory of on-site energy generation projects, including combined heat and power generation (co-gen) plants. GSA co-gen plants use natural gas to generate electricity and use the heat from the electricity generation process to heat office space. Co-gen plants are more efficient and emit fewer emissions than purchasing grid electricity and separately generating heat with natural gas or heating oil.

3. **GSA will reduce per capita energy consumption by increasing density in Federal buildings and disposing of buildings that are excess or underutilized.** GSA will engage tenants in its Federal buildings to identify opportunities to reduce per capita energy consumption by consolidating space, improving space utilization, and increasing telework. GSA is currently piloting new workplace solutions projects that will provide GSA employees with tools and training to allow them to better align workspace design with GHG emission reduction goals. GSA also will dispose of excess and underutilized real property which will reduce the energy consumed to maintain unneeded buildings.
4. **In FY 2011, GSA will work with the Department of Energy to expand energy and sustainability training for Federal facility managers to adopt a curriculum-based approach.** GSA already provides training through its Federal Infrastructure Fundamentals Training (FIFT) for property managers. This training covers operations and maintenance issues including heating, ventilation, and air conditioning (HVAC), electrical systems, elevators, and fire systems. Since January 2006, GSA has provided training to over 1,200 Federal facility managers.

*Challenges.* GSA identified challenges to achieving this goal, initiated actions to mitigate these risks, and will continue to look for new solutions.

1. GSA Scope 1 and 2 GHG emissions reduction targets measure emissions against a fixed baseline that includes owned Federal buildings but excludes most leases. As GSA moves to improve space management across its inventory of Federal buildings, it will move more employees into owned Federal buildings and out of leased space. Space consolidations and lease terminations will significantly reduce total energy consumption and GHG emissions, but may negatively impact GSA GHG emissions reductions goals, because GSA goals exclude leased space for which utility costs are included in the lease payments.
2. The current budget climate may impede GSA energy consumption and GHG emissions reduction goals. GSA relies on the Energy and Water Retrofit and Conservation program as the primary tool for reducing energy and water consumption in GSA Federal buildings. GSA has invested \$20 million per year in this program; however, GSA was not able to fund this program in FY 2011 because of significant budget cuts. GSA cannot make the building improvements necessary to improve its environmental performance without a dedicated, reliable source of funding.



d. *Positions.* GSA dedicates 25 full-time equivalents (FTE) to the Public Buildings Service Energy Division, which is responsible for the procurement and management of energy and for monitoring and reporting energy consumption in GSA Federal buildings.

e. *Agency Status and Performance Highlights.*

- GSA reduced its Scope 1 and 2 GHG emissions from Federal buildings by nearly 13 percent from FY 2008 to FY 2010, well above its reduction target of 7 percent. GSA achieved these reductions by purchasing renewable energy in the form of renewable energy credits (RECs).
- GSA reduced energy intensity in covered buildings by 16.1 percent from FY 2003 to FY 2010, above its target reduction of 15 percent. GSA has reduced its energy consumption through the sustainable design of new buildings, energy-efficient management of Federal buildings, and increased procurement of renewable energy.
- As of FY 2010, GSA had installed or awarded contracts for the installation of advanced electricity meters at the 489 facilities that represent 80 percent of GSA annual energy consumption. GSA also re-commissioned 34 covered facilities in FY 2010.
- In FY 2010, GSA purchased or generated 12.5 percent of its total electricity from renewable sources. GSA facilities generated nearly 7,500 million BTUs of on-site, renewable energy in FY 2010, and ten of eleven GSA regions had competitive electricity supply contracts in place that required at least three percent renewable energy. GSA added two new co-generation plants to its inventory, for a total of five. GSA also initiated over 70 projects to install photovoltaic cells, including a three megawatt array at the Denver Federal Center in Lakewood, CO.

f. *Planning Table.*—GSA Scope 1 & 2 GHG emissions reduction targets for Federal buildings

SCOPE 1 & 2 GHG TARGET		FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
<b>Mandated Energy Reduction Goals (BTU/SF reduced from FY 2003 base year)</b>		<b>-15%</b>	<b>-18%</b>	<b>-21%</b>	<b>-24%</b>	<b>-27%</b>	<b>-30%</b>	...	<b>TBD</b>
GSA Energy Intensity Reduction (BTU/SF reduced from FY 2003 base year)	Plan	-15%	-18%	-21%	-24%	-27%	-30%	...	37.5%
	Actual	-16.1%	...	...	...	...	...	...	...
<b>Mandated Renewable Electricity Goals (% of electricity from renewable sources)</b>		<b>5%</b>	<b>5%</b>	<b>5%</b>	<b>7.5%</b>	<b>TBD</b>	<b>TBD</b>	...	<b>TBD</b>
GSA Renewable Electricity Use (% of electricity from renewable sources)	Plan	10%	12%	14%	15%	18%	20%	...	30%
	Actual	12.5%	...	...	...	...	...	...	...
GSA Scope 1 & 2 Reduction (Reduced from FY 2008 base year)	Plan	-7%	-10%	-13%	-17%	-20%	-21.3%	...	-28.7%
	Actual	-12.7%	...	...	...	...	...	...	...

*g. Return on Investment.*

- GSA used Recovery Act funds to install energy efficient lighting in the Paul G. Rogers Federal Building in West Palm, FL. The cost of this project was \$12,639, and the estimated annual savings is \$1,532. GSA expects a simple payback period of 8 years for this project. The project will reduce the building's electricity usage and help GSA meet its energy and scope 1 and 2 GHG emission reduction targets.
- GSA used Recovery Act funds to install advanced meters and energy efficient lighting, improve HVAC systems, and install low flow urinals in the Robert T. Matsui Courthouse in Sacramento, CA. The cost of the project was \$5,248,109, and the estimated annual energy cost savings was \$331,769. GSA expects a simple payback period of 15.8 years for this project. The project will help GSA meet its energy and water reduction targets and its scope 1 and 2 GHG emission reduction target.
- GSA is using Recovery Act funds to install a 1 megawatt wind turbine at the Pembina, ND Land Port of Entry (LPOE). The cost of the project is \$2,975,720, and GSA expects a simple payback period of 30.3 years. The wind turbine is expected to meet 76 percent of the facility's electricity needs. GSA selected this project because it supports the development of new and innovative technologies and provides the agency with valuable experience regarding on-site renewable energy generation.

2.2.1.2 Scope 1 & 2 Greenhouse Gas Emissions in the GSA Internal Fleet

- a. Goal Description.* **By FY 2020, GSA will reduce Scope 1 and 2 GHG emissions from its motor vehicles by three percent below FY 2008 levels.** By FY 2015, GSA will increase its consumption of alternative fuels by 159 percent over FY 2005 levels and will reduce consumption of gasoline and diesel fuel by 30 percent from FY 2005 levels.

*Goal Scope.* GSA targets for motor vehicles include only those vehicles owned or leased for internal use by GSA employees. GSA estimates and targets exclude motor vehicles that GSA leases to other Federal agencies for their use and all non-road vehicles.

- b. Agency Lead for Goal.*

Kathleen Turco  
Associate Administrator  
Office of Government-wide Policy

- c. Implementation Methods.*

GSA has adopted the guiding principles of the Department of Energy (DOE) "Guidance for Federal Agencies on E.O. 13514 Section 12 – Federal Fleet Management" to form new strategies for reducing petroleum consumption and increasing the use of alternative fuels. GSA will: reduce vehicle miles traveled, increase fleet fuel economy, and increase use of

alternative fuels. GSA is reviewing data on actual usage and will establish quantifiable targets and action plans in the near future.

1. **GSA will review its internal fleet at least annually, to ensure that the size and capacity of each vehicle matches its mission requirement and actual usage.** GSA will use these reviews to optimize vehicle usage, right-size the fleet, and identify opportunities to decrease petroleum use.
  - a. **GSA has prepared a comprehensive Vehicle Allocation Methodology (VAM) for the internal fleet.** The GSA VAM is vehicle acquisition guidance that requires the consideration of transportation alternatives, makes sub-compact sedans the base vehicle for the internal fleet, requires the procurement of low GHG vehicles, and mandates the use of alternative fuel where available.
  - b. **GSA has developed a plan to transition the current fleet to the optimized vehicle allocation and increase fleet fuel efficiency.** GSA will turn in motor vehicles that are in excess of its needs. GSA will exchange motor vehicles for smaller vehicles where a smaller vehicle will satisfy mission requirements, and will consider hybrid-electric and plug-in electric vehicles where effective. In FY 2010, GSA replaced 311 conventional motor vehicles with hybrids.
  - c. **GSA will continue to use standard vehicle acquisition guidance to procure senior executive vehicles.** GSA does not maintain a separate senior executive fleet, and therefore, does not separately track fleet vehicles used by GSA senior executives. All GSA vehicles are procured using the same guidelines and have been or will soon be replaced by low GHG emitting vehicles.
2. **GSA will implement a long-term strategy for reducing petroleum consumption and increasing alternative fuel usage in the GSA internal fleet.** GSA will place alternative-fueled vehicles in areas where alternative fuels are readily available and ensure that alternative fuel is being used by internal fleet vehicles when it is available.
  - a. **By FY 2015, GSA will increase its consumption of alternative fuels by 159 percent over FY 2005 levels.** GSA will increase alternative fuels usage by 10 percentage points per year through FY 2015. This target was established by E.O. 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*.
  - b. **By FY 2020, GSA will reduce its consumption of gasoline and diesel fuels by 30 percent below FY 2005 levels.** GSA will reduce its use of conventional fuels by two percentage points each year from FY 2005 through FY 2020. E.O. 13514 establishes this target for all Federal agencies with a fleet of 20 or more light-duty vehicles.
3. **GSA will improve the efficiency of its shuttle bus operations and will consolidate management of all GSA shuttles into a single office by FY 2015.** GSA is holding discussions with other agencies to consolidate routes where practical. Some of the challenges of consolidating with other agencies include operating hours, route coordination, and inclement weather operations.

*Challenges.* GSA identified challenges to achieving this goal, initiated actions to mitigate these risks, and will continue to look for new solutions.

1. Limited alternative fuels infrastructure creates challenges in meeting alternative fuel consumption targets. GSA has not been successful in meeting alternative fuel consumption goals in the past, primarily because of the limited availability of fueling stations. GSA has had some success in addressing this risk by seeking access to alternative fueling sites operated by other Federal agencies and State and local governments, but there are still too few alternative fuel stations available.
2. GSA's goal of maximizing purchases of hybrid and other new technology vehicles is costly. Hybrid-electric vehicles (HEV) typically cost approximately \$10,000 more than an equivalent conventionally-powered vehicle. Plug-in hybrid-electric vehicles (PHEV) and fully electric vehicles (EV) will be even more costly. Without dedicated funding, GSA cannot continue to replace its fleet with hybrids.

*d. Positions.* GSA dedicates two full-time equivalents (FTE) in the Office of Government-wide Policy to manage the GSA internal motor vehicle fleet. GSA regions and organizations have assigned Vehicle Controlling Officials (VCO) responsible for coordinating motor vehicle activities at the local level, which they perform as a collateral duty.

*e. Agency Status.*

- In FY 2010, GSA reduced Scope 1 emissions from motor vehicles by 3.3 percent below FY 2008 levels, exceeding the FY 2020 target. GSA will revise its emissions reduction target to be more aggressive once it is better able to track alternative fuel purchases.
- In FY 2010, GSA reduced gasoline and diesel fuel consumption 21.7 percent below FY 2005 levels. GSA exceeded its FY 2010 consumption reduction target by 56,000 gallons.
- GSA missed its FY 2010 alternative fuel usage target of 48,579 gallons, consuming only 36,263 gallons. GSA, however, improved its performance from the previous year, and will continue to acquire more alternative fuel vehicles and relocate existing alternative fuel vehicles to areas where alternative fuels are more readily available. GSA is having difficulty meeting this target because GHG and petroleum use reduction goals do not always align with alternative fuel usage goals. Alternative fuel vehicles are often not the most fuel efficient vehicles in a given vehicle class and may produce more GHG emissions than equivalent, conventionally-powered vehicles over their lifetimes if they cannot readily access alternative fuel.

f. *Planning Table.* GSA Scope 1 & 2 GHG emissions reduction targets for motor vehicles

SCOPE 1 & 2 GHG TARGET		FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
<b>Mandated Petroleum Use Reduction Goal (Gross Gallon Equivalents from FY 2005 base year)</b>		<b>-10%</b>	<b>-12%</b>	<b>-14%</b>	<b>-16%</b>	<b>-18%</b>	<b>-20%</b>	<b>....</b>	<b>-30%</b>
GSA Petroleum Use Reduction (Gross Gallon Equivalents from FY 2005 base year)	Plan	-10%	-12%	-14%	-16%	-18%	-20%	....	-30%
	Actual	-21.7%	...	...	...	...	...	...	...
<b>Mandated Alternative Fuel Use in Fleet AFV Goal (Gross Gallon Equivalents from FY 2005 base year)</b>		<b>61%</b>	<b>77%</b>	<b>95%</b>	<b>114%</b>	<b>136%</b>	<b>159%</b>	<b>....</b>	<b>TBD</b>
GSA Alternative Fuel Use in Fleet AFV (Gross Gallon Equivalents from FY 2005 base year)	Plan	61%	77%	95%	114%	136%	159%	....	TBD
	Actual	45.5%	...	...	...	...	...	...	...
GSA Scope 1 & 2 Reduction (Reduced from FY 2008 base year)	Plan	...	...	...	...	...	...	....	-3%
	Actual	-3.3%	...	...	...	...	...	...	...
Senior Executive Fleet Replaced with Low-GHG, High Efficiency Vehicles (Percent replaced from FY 2008 base year)	Plan	100%	100%	100%	100%	100%	100%	...	100%
	Actual	100%	...	...	...	...	...	...	...

## 2.2.2 Goal 2: Scope 3 GHG Reduction and Agency GHG Inventory

**By FY 2020, GSA will reduce Scope 3 Greenhouse Gas (GHG) emissions by 14.6 percent below FY 2008 levels.** In FY 2008, GSA produced an estimated 157,000 metric tons of carbon dioxide from indirect (Scope 3) sources. GSA must reduce annual Scope 3 GHG emissions by 23,000 metric tons of carbon dioxide to meet its FY 2020 emissions reduction target.

GSA Scope 3 emissions are produced by sources not directly owned or controlled by GSA, including carbon dioxide emissions from purchased electricity lost during transmission and distribution of power, emissions from disposal of solid waste and treatment of wastewater from Federal buildings, and emissions from vehicles used in Federal employee travel, including commuting. GSA has adopted different strategies for reducing Scope 3 GHG emissions. Each emission source is described below.

### 2.2.2.1 Scope 3 GHG Emissions from Employee Travel

*a. Goal Description.* **By FY 2020, GSA will reduce Scope 3 GHG emissions from Federal employee travel by 25 percent from FY 2008 levels.** GSA will reduce Scope 3 emissions by 25 percent in each category of employee travel: air and ground business travel and employee commuting.

*Goal Scope.* GSA targets for business travel are based on GHG emissions from air trip counts by origination and destination and rental car data from the GSA E-Gov Travel System. GHG emissions from employee commuting are based on surveys of all GSA employees conducted in May and December 2010; respondent data were extrapolated to estimate emissions from the entire population of GSA employees.

*b. Agency Lead for Goal.*

Wade Hannum  
Director, Performance and Worklife Policy Division  
Office of the Chief People Officer

*c. Implementation Methods.*

- 1. GSA will reduce GHG emissions from employee commuting by increasing telework and alternate workplace participation rates to 60 percent by FY 2012.** GSA will update its telework policy to expand telework participation criteria for GSA employees and increase telework participation rates. GSA will also promote greater use of flexible work environments through a variety of pilots and communications vehicles.
- 2. GSA will modify travel policies and invest in new technology to reduce employee business travel.** GSA will explore using alternative forms of transportation, such as trains for travel less than 500 miles. GSA will expand deployment of teleconferencing technologies that allow employees to meet remotely. GSA will consolidate conferences and meetings and optimally locate them to reduce travel.

*Challenges.* GSA lacks effective tools to track travel GHG emissions throughout the year. Commuter emissions are calculated annually based on an employee survey. Business travel emissions from sources other than air and rental cars are not available. The calculations necessary to estimate GHG emissions from business travel and employee commuting require broad assumptions that make it difficult to regularly track GHG emissions.

d. *Positions.* GSA has several staff who manage employee commuting and business travel.

e. *Agency Status.*

- As of March 2011, over 55 percent of GSA employees participated in an AWS schedule, and over 50 percent of eligible employees reported that they telework at least one day per week.
- GSA did not meet its FY 2010 Scope 3 reduction targets for business travel and employee commuting. GSA reduced its FY 2011 travel budget and increased the use of telework to drive greater reductions in business travel and employee commuting emissions.

#### 2.2.2.2 Scope 3 GHG Emissions from Solid Waste Disposal and Wastewater Treatment

a. *Goal Description.*

**By FY 2015, GSA will reduce Scope 3 GHG emissions attributed to contracted solid waste disposal by 50 percent below FY 2008 levels.**

**By FY 2020, GSA will reduce Scope 3 GHG emissions attributed to contracted wastewater treatment by 5 percent from FY 2008 levels.**

*Goal Scope.* GSA targets for contracted solid waste disposal are based on solid waste audits conducted at 18 GSA-occupied office buildings. GSA extrapolated data from those audits to estimate the emissions associated with solid waste disposal from all GSA Federal buildings. GSA targets for wastewater treatment are based on wastewater emissions estimates from 11,792 employees who were employed at GSA in the FY 2008 baseline year.

b. *Agency Lead for Goal.*

Raheem Cash  
Director, Environmental Division  
Public Buildings Service

- c. *Implementation Methods.* **GSA will reduce GHG emissions from solid waste disposal by increasing diversion of solid waste.** GSA strategies are detailed in Goal 5, "Pollution Prevention and Waste Reduction".  
**GSA will reduce GHG emissions from wastewater treatment by improving the water efficiency of its buildings.** GSA strategies for improving water efficiency are detailed in Goal 4, "Water Use Efficiency and Management".
- d. *Positions.* GSA will complete the actions necessary to reduce GHG emissions from solid waste disposal and wastewater treatment with staff and resources assigned to and reported under Goals 4 and 5, respectively.
- e. *Agency Status.* GSA did not have Scope 3 solid waste and wastewater treatment greenhouse gas reduction targets for FY 2010.

#### 2.2.2.3 Scope 3 GHG Emissions from Transmission and Distribution Losses

- a. *Goal Description.* **By FY 2020, GSA will reduce Scope 3 GHG emissions associated with transmission and distribution (T&D) losses of purchased energy by 10 percent from FY 2008 levels.**

*Goal Scope.* GSA targets for T&D losses are based on annual estimates of purchased electricity in GSA-owned buildings and in leases where GSA is responsible for making utility payments directly to utility providers.

- b. *Agency Lead for Goal.*

Mark Ewing  
Director, Energy Division  
Public Buildings Service

- c. *Implementation Methods.* **GSA will reduce GHG emissions from T&D losses by reducing energy consumption and increasing on-site power generation.** GSA strategies are detailed in Goal 1, subsection 2.2.1.1, "Scope 1 & 2 Greenhouse Gas Emissions Reduction in Federal Buildings".

*Challenges.* GSA Scope 3 GHG emissions reductions targets for T&D losses include the estimated impact of purchased renewable energy credits (RECs). The methodology for calculating emissions from T&D losses in the *Federal Greenhouse Gas Reporting and Guidance Document* does not include the use of RECs. GSA cannot meet its T&D emissions reduction targets without the additional emissions reductions from RECs.

- d. *Positions.* GSA will complete the actions necessary to reduce GHG emissions from T&D losses with staff and resources assigned to and reported under Goal 1, subsection 2.2.1.1.



e. *Agency Status.* GSA reduced Scope 3 GHG emissions from T&D losses by 3.3 percent in FY 2010.

2.2.2.4 GSA Scope 3 GHG emissions reduction targets from all sources

SCOPE 3 GHG TARGET		FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
GSA Employee Commuting Scope 3 Reduction	Plan	-10%	-15%	-17%	-19%	-21%	-23%	...	-25%
	Actual	+5.8%	...	...	...	...	...	...	...
GSA Business Travel Scope 3 Reduction	Plan	-2%	-6%	-10%	-14%	-17%	-19%	...	-25%
	Actual	+22%	...	...	...	...	...	...	...
GSA Contracted Solid Waste Disposal Scope 3 Reduction	Plan	base	-10%	-20%	-40%	-50%	-50%	...	-50%
	Actual	+8.4%	...	...	...	...	...	...	...
GSA Contracted Wastewater Treatment Scope 3 Reduction	Plan	-0.5%	-1.0%	-1.5%	-2.0%	-2.5%	-3.0%	...	-5.0%
	Actual	+6.3%	...	...	...	...	...	...	...
GSA Transmission and Distribution Loss Scope 3 Reduction	Plan	base	-1%	-2%	-3%	-4%	-5%	...	-10%
	Actual	-3.3%	...	...	...	...	...	...	...

2.2.2.5 Develop & Maintain Agency Comprehensive Greenhouse Gas Inventory

a. *Goal Description.* **By January 2012, GSA will complete its FY 2011 GHG inventory and update its FY 2008 baseline if adjustments are needed.** GSA submitted its FY 2010 GHG inventory, FY 2008 baseline data, and an inventory management plan (IMP) to the Office of Management and Budget (OMB) and the White House Council on Environmental Quality (CEQ) in January 2011. The IMP outlines GSA data sources, data collection processes, and assumptions used to estimate the GHG inventory. GSA will use the IMP to guide and improve its FY 2011 GHG inventory.

b. *Agency Lead for Goal.*

Micah Cheatham  
Director, Office of Budget  
Office of the Chief Financial Officer

c. *Implementation Methods.*

1. **GSA will work with OMB, CEQ, and the DOE Federal Energy Management Program (FEMP) to strengthen GHG emissions estimation methodologies.** In FY 2011, GSA is supporting interagency efforts to develop new methodologies for accounting for GHG emissions from leased space and the Federal supply chain. GSA will continue to strengthen existing methodologies for estimating GHG emissions from business travel and employee commuting.
2. **GSA will continue to include GHG emissions and emissions reductions targets in its budget formulation process.** GSA included GHG emissions disclosures in its FY 2012 Congressional Justification. GSA budget request included FY 2008 and FY 2010 emissions as well as future-year reduction estimates based on GSA sustainability goals. GSA will continue to enhance these submissions to provide stakeholders with better information on the environmental impact of GSA funding decisions.
3. **In FY 2011, GSA will continue to integrate GHG emissions data into agency performance management processes.** GSA has developed dashboards to provide monthly data on GHG emissions from buildings and quarterly data on air business travel. GSA has integrated GHG emissions data into its Quarterly Performance Reviews, to ensure these goals receive appropriate management attention. Additional information on GSA efforts to integrate environmental performance into agency management systems is provided in section 1.4, "Plan Implementation". GSA will add additional environmental performance metrics in future years, and will improve data accuracy and collection and analysis methods.

*Challenges.* GSA identified challenges to achieving this goal, initiated actions to mitigate these risks, and will continue to look for new solutions.

1. GSA lacks certain emissions data which will be costly to obtain. For example, GSA could not provide emissions data on fugitive gases in its FY 2010 GHG inventory. GSA will work to obtain the data, but the costs of doing so may exceed the value, particularly where funds used to acquire data could be used on building projects to reduce actual emissions.
2. GSA will have difficulty calculating Scope 3 emissions from leased space because not all private-sector lessors are required to provide information on tenant energy consumption. Future GSA lease contracts will require the disclosure of energy usage, but it will be some time before the leases without energy information requirements are cycled out.

d. *Positions.* GSA maintains a comprehensive GHG inventory with existing staff and program resources.

e. *Agency Status.*

- GSA submitted its FY 2010 GHG inventory and FY 2008 baseline in January 2011. GSA is expanding the inventory to include Scope 3 GHG emissions from leased space and contacting vendors in its supply chain to obtain information on their emissions.
- GSA prepared its FY 2010 GHG inventory and FY 2008 baseline data using the standard methodologies in the FEMP *Federal Greenhouse Gas Accounting and Reporting Guidance* document. GSA included all required GHG emissions sources in its FY 2010 inventory and FY 2008 baseline. GSA calculated Scope 1 and 2GHG emissions using actual energy consumption in both years. GSA used the following assumptions when calculating Scope 3 GHG emissions.
  - GSA used a survey administered through the *GSA Carbon Footprint and Green Procurement Tool* to estimate emissions from employee commuting for FY 2010. GSA used a standard survey developed by the Department of Transportation John A. Volpe National Transportation Systems Center.
  - GSA did not use the standard FEMP methodology for calculating Scope 3 emissions from rental cars. GSA used actual annual rental car bookings from its E-Gov Travel System travel database and applied the 419 miles per rental assumption included in the *E.O. 13514 Section 9 Technical Support Document* to estimate GHG emissions.
  - GSA estimated Scope 3 emissions from contracted solid waste disposal using per-employee waste production factors from waste audits at 65 GSA Federal buildings. The resulting waste production factors were multiplied by GSA full-time equivalents (FTE) in FY 2008 (11,792) and FY 2010 (12,536).
- GSA independently verified its FY 2010 GHG emissions inventory before submission. All data, calculations, and GHG emissions estimates in the FY 2010 GHG inventory were reviewed by employees who were not involved in the initial preparation of the inventory.

## 2.2.3 Goal 3: Sustainable Design, Green Buildings, and Local Planning

As described below, GSA adopted different strategies for addressing sustainability considerations in building design and operation and increasing the effectiveness of regional and local planning.

### 2.2.3.1 High Performance Sustainable Design and Green Buildings

a. *Goal Description.* **By FY 2015, 18 percent of GSA-owned Federal buildings greater than 5,000 gross square feet (GSF) and leases greater than 5,000 GSF will incorporate the sustainable practices in the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings.** The Guiding Principles are five high-level objectives for the design, construction, and operations and maintenance of high-performance green buildings.

- I. Employ Integrated Design Principles;
- II. Optimize Energy Performance;
- III. Protect and Conserve Water;
- IV. Enhance Indoor Environmental Quality; and
- V. Reduce the Environmental Impact of Building Materials.

**GSA remains committed to meeting the green buildings, sustainable design, and space utilization goals established in E.O. 13514**, including ensuring all new Federal buildings entering the planning process in 2020 are designed to achieve net-zero energy design by 2030, complying with the Guiding Principles in all new construction and major renovation projects, incorporating sustainable practices and technologies into buildings and building management. GSA will also optimize space utilization in Federal buildings.

b. *Agency Leads for Goal.*

Eleni Reed  
Chief Greening Officer  
Public Buildings Service

Don Horn  
Assistant Director  
Office of Federal High-Performance Green Buildings  
Office of Government-wide Policy

c. *Implementation Methods.*

The following methods will be used to achieve the goals for high performance green buildings and sustainable design across GSA's inventory.

1. **GSA will continue to demonstrate progress toward the goal of designing buildings to achieve net-zero energy by FY 2030.** In FY 2011, GSA started the design toward net-zero energy through three demonstration projects: Wayne Aspinall Federal Building in Grand Junction, CO, Pease Federal Building in Portsmouth, NH, and the redesign of the Land Point of Entry (LPOE) in Columbus, NM. GSA is reviewing strategies

implemented in the DOE National Renewable Energy Laboratory net-zero energy building in Golden, CO for application in GSA projects.

2. **By December 2011, GSA will assess at least seven percent of its owned buildings greater than 5,000 gross square feet (a minimum of 82 buildings) and at least seven percent of its leases greater than 5,000 gross square feet (a minimum of 336 leases) for compliance with the Guiding Principles.** In FY 2011, GSA will audit 15 percent of its assessed, owned facilities and five percent of assessed, non-delegated leases to verify compliance.
3. **In FY 2011, GSA will continue to incorporate sustainable practices into agency policy and planning for existing and new Federal buildings and leases, including lease renewal strategies.**
  - a. **GSA includes the Guiding Principles in the *Facilities Standards for the Public Buildings Service (P100)* design standards and in operations and maintenance contracts.** The Guiding Principles are also included in all architecture and engineer services contracts for new construction and major building renovation projects.
  - b. **In FY 2011, GSA will develop performance specifications for green interior finishes including paints and coatings, resilient flooring and cove base, suspended ceiling systems, and wall covering.** These will be evaluated for inclusion in GSA's *Facilities Standards* and leasing solicitations.
  - c. **By the end of FY 2012, all eligible GSA owned Federal buildings will have an accurate ENERGY STAR rating.** In FY 2011, GSA will upload historical energy and water consumption data for 816 owned facilities to EPA ENERGY STAR's Portfolio Manager tool and rate 50% of its owned facilities eligible to obtain a rating.
  - d. **Beginning in FY 2011, GSA will use the LEED for Existing Buildings: Operations & Maintenance (LEED EBOM) volume certification program to support compliance with the Guiding Principles for Federal buildings.** Federal buildings that are certified LEED for New Construction (LEED-NC) will register for LEED Existing Building Operations and Maintenance (LEED-EBOM) within five years of their completion.
  - e. **GSA requires that all new leases be awarded in Energy Star buildings,** except where one of the four statutory exceptions apply. EISA requires all new leases to be awarded in buildings with an ENERGY STAR label, , except where available ENERGY STAR space does not meet agency requirements, leases under 10,000 gross square feet, leases in historical buildings, and succeeding leases where the agency remains in the same building that it occupied previously.
  - f. **In FY 2011, GSA will assess sustainable provisions within standard lease specifications, including optional clauses.** These provisions will be incorporated into GSA's Leasing Desk Guide. Where practicable, GSA will incorporate sustainability requirements into new replacing, superseding and succeeding leases. GSA will require lessors in succeeding leases to make cost-effective energy

efficiency improvements to their buildings, even though these leases are exempt from Energy Star requirements.

- g. Beginning in FY 2011, GSA will annually select no less than 12 cost-effective, innovative green building strategies to demonstrate in GSA Federal buildings through the Green Proving Ground program.** The program will test and evaluate new practices and technologies and share results with other Federal agencies and industry.
- 4. In FY 2011, GSA will continue to dispose of excess federal real property from its owned inventory and on behalf of other Federal landholding agencies.** GSA will also serve as a trusted advisor to landholding agency customers for due diligence requirements, including CERCLA, NEPA, and Section 106 of the National Historic Preservation Act.

GSA will continue to identify obstacles in the real property disposal process, and it will promote strategies to use real estate more efficiently, including greater workspace utilization and increased worker mobility. GSA will refocus on its available authorities and redeployment strategies, including outleasing, relocation, and real property exchanges. In addition, GSA will continue its concurrence role to landholding agency customers for demolition, so that those customers can see cost savings from deferred O&M and backlog repairs and alterations.

- a. In FY 2011, GSA will complete strategic portfolio plans for three customer Federal agencies.** GSA is collaborating with the Social Security Administration, the Department of Health and Human Services, and the Department of State to better understand their workspace requirements and align workspace with mission requirements and sustainability goals. GSA will identify projects to consolidate space, increase space utilization and promote telework that are consistent agency needs.
  - b. GSA has developed new guidance to help agencies make sustainable space acquisition and management decisions.** *GSA Space Utilization Guidance and Recommendations* provides strategies to support workspace reductions, improve workspace utilization, and increase flexibility to quickly and easily reconfigure workspace.
- 5. By December 31, 2011, GSA will assess available green buildings certification systems to determine the most appropriate system for Federal use.** Section 436 of EISA requires GSA to select standards for rating Federal buildings and reassess improved or higher standards every five years. GSA currently uses the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) certification as its primary tool to measure sustainability in Federal buildings.
- 6. In FY 2011, GSA will deploy new tools to engage building occupants in collaborative efforts to improve energy and water conservation, waste reduction and indoor air quality in Federal buildings.** In FY 2011, GSA will launch the Tenant E-Communication Handbook (TECH) pilot in 27 Federal buildings. GSA will establish a

website tailored to the tenants of each building; each TECH site will highlight GSA sustainability efforts and promote sustainable choices by building occupants.

7. **GSA will continue to conserve, rehabilitate, and reuse historic Federal buildings to ensure that they are contributing to high performance green building goals.** In FY 2011, GSA will develop performance specifications that promote reuse and retrofit of windows made with old growth wood when feasible.

*Challenges.* GSA identified challenges to achieving this goal, initiated actions to mitigate these risks, and will continue to look for new solutions.

1. GSA is not able to acquire leased space that meets the Guiding Principles and/or ENERGY STAR requirements in all geographic areas because such space is not available, is cost-prohibitive, or is only available under terms that are not favorable to the government. GSA will focus green leasing efforts in markets where sustainable leased space is available in greater supply and for customer Federal agencies that are actively seeking green leases.
  2. GSA does not have authority over space planning decisions made by client agencies. In the absence of set targets or shared responsibility for space reductions, GSA will have limited power to influence such decisions. There is currently no established method for developing, setting or tracking agency-specific space reduction goals.
  3. Reporting leased assets in compliance with the Guiding Principles is challenging. The Guiding Principles are written for entire buildings; however, GSA generally leases a portion of a building and therefore, cannot require that the entire building meet the Guiding Principles. GSA is leading an interagency work group to develop a new set of criteria for evaluating Guiding Principles compliance in leased assets.
- d. *Positions.* PBS currently has a Chief Greening Officer and six regional sustainability managers and anticipates hiring five additional sustainability managers, so that each of GSA's 11 regions has a full-time position dedicated to sustainable buildings.
- e. *Agency Status.*
- In FY 2010, GSA assessed 63 Federal buildings and leases in 264 buildings and reported them as sustainable buildings in the Federal Real Property Profile, the government-wide database for reporting Federal real property. GSA exceeded its FY 2010 target for assessing owned buildings and leases for compliance with the Guiding Principles.
  - As of March 2011, 57 GSA projects had achieved LEED certification, including 31 owned buildings and 26 leases. In addition, GSA held leases in 115 buildings that achieved a certification under a green building rating system. In FY 2010, GSA completed its first historic building rehabilitation to achieve a LEED Gold rating, the John W. McCormack Federal Building in Boston, MA. GSA is using Recovery Act funding to install high-performance green building upgrades in 87 historic buildings.

- GSA earned the Energy Star label in 54 owned Federal buildings in FY 2010 and held leases in 373 Energy Star labeled buildings.
- In FY 2010, 15 percent of GSA projects entering the design phase included innovative building technologies such as solar hot water systems, demand control ventilation, and cool roofs. GSA will continue to demonstrate cost-effective, innovative building strategies to minimize consumption of energy, water, and materials by implementing innovative technologies through its Green Proving Ground Program.

f. *Planning Table.* GSA targets for Federal buildings and leases that incorporate the sustainable practices in the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings

SUSTAINABLE / GREEN BUILDINGS		FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
Total Buildings Meeting Guiding Principles	Plan	5%	7%	10%	13%	15%	18%	...	30.5%
	Actual	5.2%	...	...	...	...	...	...	...
GSA Owned Facilities Meeting Guiding Principles	Plan	5%	7%	10%	13%	15%	18%	...	33%
	Actual	5.8%	...	...	...	...	...	...	...
GSA Target for Leased Facilities Meeting Guiding Principles	Plan	5%	7%	10%	13%	15%	18%	...	28%
	Actual	5.1%	...	...	...	...	...	...	...

2.2.3.2 Regional and Local Planning

a. *Goal Description.*

- **By July 31, 2011, GSA will complete transportation and long-range planning outreach pilots in 11 metropolitan areas and will complete ten additional outreach pilots by June 30, 2012.**
- **By July 31, 2011, GSA will issue revised policies and guidelines for planning new Federal facilities and leases to incorporate sustainable building location criteria,** including consideration of sites that are pedestrian friendly, near existing employment centers, or are accessible to public transit.
- **By June 30, 2012, GSA will develop quantitative measures for comparing the sustainability of alternative locations and will use this comparative method in four lease transactions and two Federal site selections.**

*Goal Scope.* GSA objectives under this goal apply to its planning activities for all new Federal facilities, including new structures on existing Federal land, and all new leases.



b. *Agency Lead for Goal.*

Frank Giblin  
Director of Urban Development  
Office of the Chief Architect  
Public Buildings Service

c. *Implementation Methods.*

1. **By July 31, 2011, GSA will participate in regional planning efforts with metropolitan planning organizations (MPO) responsible for developing long-range regional transportation plans in 11 metropolitan areas.** GSA will ensure that regional planning consultations among GSA, other Federal agencies, and MPOs take place well ahead of future Federal project development.
  - a. **In FY 2011, GSA will engage local planning officials in informal information sharing to build sound working relationships and identify issues of mutual interest.** To date, GSA has conducted six planning meetings with local partners. GSA will complete five additional planning meetings in FY 2011 and conduct ten additional outreach planning meetings with metropolitan areas in FY 2012. Successful practices identified in these pilots will be adopted in additional metropolitan areas and used to inform further policy development.
  - b. **By the end of FY 2011, GSA will develop a list of metropolitan areas and coordinate initial meetings with MPOs.** GSA, in consultation with the Sustainable Communities initiative led by the Department of Housing and Urban Development (HUD), Department of Transportation (DOT), and the Environmental Protection Agency (EPA), will select the metropolitan areas that would realize the greatest benefit from advanced planning and collaboration, based on the size of GSA Federal buildings and planned new construction projects in the area and other factors.
2. **By July 31, 2011, GSA will revise its processes for locating Federal buildings and leases to incorporate practices that uphold sustainability and community development goals.** In FY 2010, GSA conducted training in the concepts of sustainable location decisions and hosted a series of webinars providing an introduction to agency involvement in regional and local planning. GSA has also contracted with Rutgers University to provide professional development courses in planning.
  - a. **By July 31, 2011, GSA will issue a new Site Selection and Acquisition Reference Guide and update its lease procurement policies and standards, the *Leasing Desk Guide*, to integrate sustainable location considerations.** The new guidelines will add criteria for review, including technical, business, and sustainable location standards, and align leasing policies with the regional and local planning goals of E.O. 13514 and the “Recommendations on Sustainable Locations for Federal Facilities” prepared pursuant to section 10 of E.O. 13514.

- b. **In FY 2011, GSA will complete a draft update to government-wide location policy on the Federal Management Regulations** (Subchapter C, Part 102-83, *Location of Space*). GSA will align Federal site selection policies with new regional and local planning objectives and the “Recommendations on Sustainable Locations for Federal Facilities”, and will include guidance for analyzing ecological impacts during the location selection process. GSA will coordinate with the HUD / DOT / EPA Sustainable Communities initiative. GSA expects to begin the regulatory review process during FY 2011.
  
- c. **In FY 2012, GSA will develop quantitative location efficiency measures as a way of comparing the relative sustainability of potential lease locations or Federal site selection and will pilot these measures in four lease transactions and two Federal site selections.** By June 30, 2012, GSA will select a tool for use in comparing location efficiency and identifying pilot project opportunities. Decision support tools that compare location efficiency will inform analysis by decision makers on sustainability factors, including Scope 3 emissions, associated with alternative locations.

*Challenges.* Federal agencies do not have metrics or reporting processes in place to track status and progress against the regional and local planning goals in E.O. 13514. An interagency working group led by the EPA, DOT, and HUD has considered criteria for determining sustainable locations for Federal facilities and has published recommendations. Based on the recommendations of the working group, GSA will develop sustainable location indicators that could be used to evaluate existing and potential Federal building locations. Once developed, GSA will work with partner Federal agencies to determine the most suitable methodology to track progress toward regional and local planning goals.

- d. *Positions.* GSA anticipates that the actions necessary to meet regional and local planning requirements would be completed with existing staff and program resources.
  
- e. *Agency Status.*
  - GSA has updated its National Environmental Policy Act (NEPA) desk guide to ensure that energy usage impacts and opportunities for alternative energy sources are analyzed during the NEPA process. The updated GSA NEPA desk guide includes processes for coordination and consultation with Federal, State, Tribal and local governments regarding impacts to local ecosystems, watersheds, and environmental management associated with proposed new or expanded Federal facilities.

## 2.2.4 Goal 4: Water Use Efficiency and Management

### a. Goal Description.

- **By FY 2020, GSA will reduce potable water use intensity 26 percent below FY 2007 levels.** The Energy Policy Act of 2005 (“EPACT05”, Public Law 109-58) requires all Federal agencies to reduce potable water use intensity, measured in gallons per gross square foot (GSF), by two percentage points per year over an FY 2007 baseline, which equates to a cumulative reduction of 26 percent from FY 2008 through FY 2020. GSA FY 2007 baseline water use intensity was 15.53 gallons/GSF.
- **By FY 2020, GSA will reduce industrial, landscaping, and agricultural (ILA) water use by at least 20 percent below FY 2010 consumption.** E.O. 13514 establishes this target for all Federal agencies. GSA has established an annual two percentage point reduction target to attain a cumulative reduction of 20 percent by FY 2020.

*Goal Scope.* GSA targets for reducing water use intensity include water consumption in GSA-owned buildings and in leases where GSA is responsible for making utility payments directly to utility providers. GSA targets do not include leased space where utilities are provided by the landlord and included in the lease payment. GSA targets include water from on-site wells, which is manually reported by subject facilities.

### b. Agency Lead for Goal.

Mark Ewing  
Director, Energy Division  
Public Buildings Service

### c. Implementation Methods.

1. **GSA will implement water management best practices in Federal buildings**, using an opportunity-based approach. GSA will assign water management responsibilities to designated facility managers.
  - a. **GSA will update routine maintenance procedures to include testing water systems and fixtures for optimal performance.** GSA will test water pressure during routine maintenance to ensure the water supply system has acceptable levels of performance. GSA will conduct leak detections of the water distribution system, and inspect fixtures, such as showers, toilets, sinks, and urinals. GSA will repair or replace aerators as necessary and will take steps to ensure tenants are aware of leak reporting procedures.
  - b. **GSA will optimize irrigation equipment, scheduling, and plant health and selection, so that irrigation systems deliver only the amount of water that is required by the existing landscape in its respective climate.** GSA will perform routine maintenance of irrigation systems to detect leaks, and will develop effective water scheduling or landscaping irrigation and irrigation controllers. GSA will also increase use of mulching mowers and aerate as a basic practice of landscaping.

- c. **GSA will audit facilities that have single-pass cooling systems and retrofit equipment to a closed-loop system that reuses potable water.** Single-pass cooling systems, including air conditioners, ice machines, and condensers, remove heat by transferring it to clean water, which is then disposed of rather than reused. Closed-loop piping re-circulates water to a remote cooling tower, so it can be cycled back through the system.
2. **GSA will dedicate funding to water conservation projects in Federal buildings.** GSA historically has allocated a single pool of resources to both energy and water conservation projects. Potential projects are evaluated and prioritized based on financial and environmental performance factors; however, because water is typically much cheaper than energy, the project selection process has heavily favored energy projects. Beginning in FY 2010, GSA has dedicated funds specifically for water conservation projects, water audits, and, where appropriate, advanced water meters and sub-meters.
3. **GSA will increase EISA Energy and Water Evaluations, deploy advanced water meters in all covered buildings, and integrate water metering data into agency decision-making.**
  - a. **GSA will reduce water use intensity by conducting water evaluations,** as required by EISA section 432, and will ensure that all covered buildings are retro-commissioned once every four years. Retro-commissioning is a systematic investigative process to ensure that all building equipment operates efficiently as a system. GSA operates 135 “covered buildings” under EISA that represent 75 percent of GSA potable water consumption. GSA is using Recovery Act funds to retro-commission 82 of its covered facilities in FY 2011.
  - b. **GSA will install advanced water meters in all Recovery Act projects by FY 2012** and will separately meter cooling tower water usage where cost-effective. Advanced utility meters provide real-time consumption data to building operators. Operators can use this data to adjust building conditions to reduce peak demand or to identify and correct sub-optimal performance in building systems.
  - c. **GSA will integrate energy and water evaluations and advanced meter data into agency decision-making processes.** GSA will use water consumption data to benchmark building performance and to prioritize buildings for water use evaluations and projects. Advanced meter data will allow GSA to identify opportunities to optimize building systems and prioritize investments.

*Challenges.* GSA identified challenges to achieving this goal, initiated actions to mitigate these risks, and will continue to look for new solutions.

1. GSA does not have a methodology to track or report industrial, landscaping, and agricultural (ILA) water consumption. GSA does not have baseline data for ILA consumption and is not able to report ILA water consumption to measure progress against targets, as required by E.O. 13514. GSA will work to obtain higher quality data, but the costs of collecting the data may exceed the value of the data, particularly where funds dedicated to acquiring data could be used on projects to reduce water usage.

2. GSA has not yet identified specific actions necessary to implement and achieve the objectives of the EPA *Stormwater Guidance for Federal Facilities*. GSA has developed some strategies to minimize storm water run-off and is updating the GSA water management guide to add best practices for managing exterior run-off and to encourage landscaping practices that promote evapotranspiration, the natural dispersal of rain water through ground evaporation and the loss of moisture from growing plants. GSA pursues LEED credits that improve stormwater management in its LEED certified new construction and modernization projects. For example, GSA pursues green roof technologies that reduce stormwater runoff in every new construction and modernization project that involves roof replacement.
  3. Water continues to be inexpensive in many parts of the country, making it difficult for water conservation projects to provide a positive return on investment or be life cycle cost effective.
- d. *Positions*. GSA dedicates 25 full-time equivalents (FTE) to the Public Buildings Service Energy Division, which is responsible for water management in GSA Federal buildings.
- e. *Agency Status*.
- As of FY 2010, GSA had reduced water intensity in covered buildings by 8.7 percent below FY 2007 levels. GSA exceeded its FY 2010 target of a 6 percent reduction. The *GSA Water Management Plan* has been recognized by DOE as a model guide for water management best practices.
  - As of FY 2010, GSA had advanced water meter projects completed or underway at 156 facilities. GSA started an irrigation controls pilot project in Denver, CO, to evaluate methods for capturing ILA water consumption. GSA also initiated water retrofit projects at the Sam Nunn Federal Center in Atlanta, GA and the Denver Federal Center in Lakewood, CO.
  - Approximately one third of GSA Recovery Act projects include building improvements that will reduce water consumption. These projects are estimated to save approximately 175 million gallons of water annually.

f. *Planning Table. Water Use Efficiency and Management Targets*

WATER USE EFFICIENCY & MANAGEMENT		FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
<b>Mandated Potable Water Reduction Targets (gallons/GSF reduced from FY 2007 base year)</b>		<b>-6%</b>	<b>-8%</b>	<b>-10%</b>	<b>-12%</b>	<b>-14%</b>	<b>-16%</b>	<b>...</b>	<b>-26%</b>
GSA Potable Water Reduction (gal/GSF reduced from FY 2007 base year)	Plan	-6%	-8%	-10%	-12%	-14%	-16%	...	-26%
	Actual	-8.7%	...	...	...	...	...	...	...
<b>Mandated ILA Water Reduction Targets (gallons reduced from FY 2010 base year)</b>		<b>base</b>	<b>-2%</b>	<b>-4%</b>	<b>-6%</b>	<b>-8%</b>	<b>-10%</b>	<b>...</b>	<b>-20%</b>
GSA Industrial, Landscaping, and Agricultural Water Reduction (gallons reduced from FY10 base year)	Plan	base	-2%	-4%	-6%	-8%	-10%	...	-20%
	Actual	...	...	...	...	...	...	...	...

g. *Return on Investment.*

- GSA used Recovery Act funds to install low flow toilets and high efficiency valves in the bathrooms of the Gallup Federal Building in Gallup, NM. The project cost was \$22,605, and the estimated annual savings is \$2,152. GSA expects a simple payback period of 10.5 years for this project. The project reduces water usage in a building located in a region where water is scarce, and it will help GSA meet its water intensity reduction targets.
- GSA used Recovery Act funds to install low flow fixtures in The Centre Building in Farmers Branch, TX. The project cost was \$120,131, and the estimated annual savings is \$15,390. GSA expects a simple payback period of 7.5 years. This project will reduce water usage in building located in a state that is currently experiencing a severe drought, and it will help GSA meet its water intensity reduction targets.

## 2.2.5 Goal 5: Pollution Prevention and Waste Reduction

- a. *Goal Description.* **By FY 2015, GSA will divert at least 50 percent of non-hazardous solid waste from landfills through reduction, recycling, re-use and composting methods.** E.O. 13514 establishes this goal for all Federal agencies. GSA will divert ten percent of its non-hazardous waste from sources other than Construction and Demolition (C&D) in FY 2011 and will increase diversion by ten percentage points in each subsequent year through FY 2015.

*Goal Scope.* GSA targets for waste diversion, pest management, and landscaping practices apply to the activities of all GSA employees and all Federal tenants of GSA-owned Federal buildings.

- b. *Agency Lead for Goal.*

Raheem Cash  
Director, Environment Division  
Public Buildings Service

- c. *Implementation Methods.*

1. **In FY 2011, GSA will continue to assess waste management practices to identify viable opportunities for increasing diversion of solid waste, C&D debris, and compostable organic waste.** GSA uses waste audits to measure recycling rates and diversion effectiveness for non-hazardous, non-C&D solid waste. A waste audit is a formal, structured process of sorting through waste to identify the volume and percentage of materials that could have been diverted. Waste audits measure the effectiveness of waste management systems and identify opportunities to increase diversion of solid waste, compostable materials, and organic waste. GSA completed solid waste audits in 65 buildings in FY 2010 and will complete audits in an additional 62 buildings in FY 2011.
2. **By June 30, 2011, GSA will complete pilot projects to promote recycling and will increase recycling rates by at least ten percent in GSA-owned Federal buildings.** GSA is conducting pilot projects in 48 buildings to increase building occupant participation in the recycling program and to improve the completeness and accuracy of the waste diversion reporting. The pilot projects will identify best practices and strategies for increasing recycling rates, which will reduce volumes of solid waste sent to landfills and reduce GSA Scope 3 GHG emissions from contracted solid waste disposal.

In FY 2011, GSA started tracking municipal solid waste generation and diversion rates in 275 Federal buildings. GSA found that recycling rates in those buildings averaged 34 percent. GSA has made increasing recycling rates one of its agency High-Priority Performance Goals reported at [www.performance.gov](http://www.performance.gov) and in the President's Budget.

3. **GSA will minimize its generation of pollutants through source reduction of hazardous chemicals and materials**, increasing its use of alternative chemicals and processes, and decreasing agency use of GHG-emitting chemicals. GSA is committed to sourcing green cleaning and maintenance products to reduce consumption and disposal of hazardous chemicals and materials. Actions for source reduction of hazardous chemicals and pollutants are outlined in Goal 6, "Sustainable Acquisition".
4. **GSA will reduce printing paper use and increase the use of uncoated paper containing at least 30 percent postconsumer fiber.** GSA actions to reduce printing paper use and increase use of recycled paper are addressed in Goal 6, "Sustainable Acquisition", and Goal 7, "Electronic Stewardship".

*Challenges.* GSA identified challenges to achieving this goal, initiated actions to mitigate these risks, and will continue to look for new solutions.

1. GSA pollution prevention and waste elimination goals require voluntary actions by tenants of GSA Federal buildings and significant coordination across GSA. Other Federal agency tenants are responsible for the majority of the waste and pollution impacts associated with GSA-owned Federal buildings. Most of the waste and pollution generated by GSA are a direct result of products purchased and used by GSA cleaning and maintenance contractors. GSA has established a cross-functional task force to address and overcome long-standing challenges related to vendor education and accountability for environmental performance.
  2. GSA does not centrally manage C&D waste activities or track data on diversion rates. GSA requires that all Federal building construction and major building renovation projects seek LEED Gold certification, and C&D recycling is an element of the LEED certification process. GSA is developing a process to centralize data collected on C&D diversion rates from construction contractors, but it will be unable to set measurable targets for this goal until it obtains this data.
  3. GSA is having difficulty identifying and disposing of chlorofluorocarbons (CFCs) in its buildings. GSA is working with facility managers to inventory CFCs in its buildings and educating facility management staff on sources of CFCs to improve the quality of its CFC inventory. GSA will be able to prioritize and expedite the transfer or disposal of CFCs once it has a complete and accurate inventory.
- d. *Positions.* GSA dedicates two full-time equivalents (FTE) to the Public Buildings Service Environment Division, which is responsible for all aspects of environmental management in GSA Federal buildings.
- e. *Agency Status.*
- GSA added new language to its standard custodial contract specifications requiring the use of Green Seal certified and other verifiably green cleaning products. GSA conducted significant research on the cost and availability of green cleaning products in



FY 2010 and found that green cleaning products are widely available and cost competitive.

- In FY 2010, GSA installed a pulper/extractor in the cafeteria at the Department of Interior Headquarters Building in Washington, DC, to reduce the volume of organic waste shipped to landfills. The pulper/extractor converts food waste into a beneficial compost product. GSA is monitoring performance to evaluate the feasibility of expanding on-site composting to other facilities.
- GSA also has started off-site composting of organic waste at locations where offsite composting services are available. The GSA Regional Headquarters Building in Auburn, WA has increased waste diversion by 20 percent through off-site composting of food and organic waste.
- In FY 2010, 100 percent of applicable buildings complied with sections 301-313 of the Emergency Planning and Community Right-to-Know Act of 1986 (“EPCRA”, 42 U.S.C. §§ 11001 *et seq.*).
- As of June 1, 2011, GSA has transferred 46 percent of its unneeded chlorofluorocarbons to the Defense Logistics Agency for reuse.

f. Planning Table. GSA Pollution Prevention and Waste Reduction Targets

POLLUTION PREVENTION and WASTE ELIMINATION		FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
GSA Non-Hazardous Solid Waste Diversion (non C&D)	Plan	base	10%	20%	30%	40%	50%	...	TBD
	Actual	...	...	...	...	...	...	...	...
GSA Construction and Demolition Debris Diversion	Plan	base	hold	...	...	...	50%	...	TBD
	Actual	no data	...	...	...	...	...	...	...
If agency uses on-site or off-site waste-to-energy, estimated total weight of materials managed through waste-to-energy	Plan	n/a*							
	Actual	n/a							
Number of sites or facilities with on-site composting programs	Plan	base	3	3	5	10	15	...	TBD
	Actual	2	...	...	...	...	...	...	...
Number of sites or facilities recycling through off-site composting programs	Plan	base	5	5	7	14	25	...	TBD
	Actual	5	...	...	...	...	...	...	...
Percent of agency-operated offices/sites with a recycling program	Plan	95%	95%	95%	100%	100%	100%	...	100%
	Actual	no data	...	...	...	...	...	...	...
Percent of multi-tenant buildings with a recycling program	Plan	95%	95%	95%	100%	100%	100%	...	100%
	Actual	no data	...	...	...	...	...	...	...
GSA appropriate facilities with active composting programs	Plan	base	base	10%	15%	30%	50%	...	TBD
	Actual	...	...	...	...	...	...	...	...
GSA unwanted/unneeded CFC transferred and properly disposed of or reused	Plan	base	30%	75%	100%	100%	100%	...	100%
	Actual	no data	...	...	...	...	...	...	...
GSA appropriate facilities in compliance with EPCRA	Plan	base	100%	100%	100%	100%	100%	...	100%
	Actual	100%	...	...	...	...	...	...	...

\*GSA does not have any on-site waste-to-energy generators, and it does not actively participate in any off-site waste-to-energy generation programs.

2.2.6 Goal 6: Sustainable Acquisition

- a. *Goal Description.* **GSA will ensure that at least 95 percent of new contract actions in support of GSA operations and using GSA funds require the supply or use of environmentally preferable products and services**, including those that are energy efficient, water efficient, bio-based, non-ozone depleting, contain recycled content, or are non-toxic or less toxic alternatives.

*Goal Scope.* GSA targets for sustainable acquisition include all new contract actions in support of GSA operations and using GSA funds. This includes new contracts and task or delivery orders for products and services for internal use, administrative support, and building construction, repairs and alterations, and operations and maintenance.

GSA does not include work performed on behalf of other Federal agencies through reimbursable agreements or other funding arrangements in its contracting goals because GSA does not have reliable information for reporting performance. GSA strategies for promoting government-wide sustainable acquisition are detailed in Goal 8, "Government-wide Support".

- b. *Agency Lead for Goal.*

Kathleen Turco  
Associate Administrator  
Office of Government-wide Policy

- c. *Implementation Methods.*

1. **In FY 2011, GSA will deploy mandatory general green purchasing awareness training for all of its employees.** GSA also will develop sustainable acquisition training specifically for Multiple Award Schedules. GSA will deploy on-line green purchasing training for its employees through the GSA intranet and make it available government-wide at the GSA Center for Acquisition Excellence (CAE), at [www.gsa.gov/cae](http://www.gsa.gov/cae). CAE is a free e-learning site that provides Federal acquisition professionals with training on GSA acquisition vehicles, policies, and guidance.
2. **In FY 2011, GSA will begin tracking sustainable acquisition compliance at the point of award and will develop processes for regular review and analysis of sustainable acquisition data.** GSA will perform manual reviews of random samples of applicable contracts semiannually to monitor compliance. Once GSA completes updating the Product and Service Codes (PSC) manual, GSA and other Federal agencies will be able to track sustainable acquisition compliance through contracting systems, including the government-wide Federal Procurement Data System (FPDS).

3. **By January 31, 2012, GSA will update its affirmative purchasing plan to reflect lessons learned, new requirements, and new sustainable products and services.** In January 2011, GSA issued a Green Purchasing Plan (GPP) that defines “sustainable acquisition” based on existing regulations and standards and provides guidance on incorporating sustainability into all procurement decisions. GSA is implementing the GPP through employee training and by building internal monitoring systems and processes.
4. **GSA will use sustainable acquisition principles, including source reduction, to reduce pollution and hazardous materials, minimize waste generation, and reduce GHG emissions.** GSA is initially focused on reducing printing paper use and increasing use of uncoated paper containing at least 30 percent postconsumer fiber. By December 31, 2011, GSA will identify strategies to promote the use of office paper products with greater than 30 percent postconsumer content.

*Challenges.* GSA has no systematic or automated method to demonstrate compliance with the 95 percent sustainable acquisition goal. GSA is updating the Products and Services Code (PSC) manual to add new codes for sustainable products and services; once complete, agencies including GSA will use the new codes to track sustainable acquisitions in contract management and reporting tools. Until the PSC Manual is updated, GSA must measure its baseline and compliance through manual reviews of a random sample of contracts. This process is labor-intensive, does not present a comprehensive picture of compliance, and does not identify non-compliant contracts outside of the review sample.

d. *Positions.* GSA dedicates nine full-time equivalents (FTE) to sustainable acquisition policy, training, and outreach.

e. *Agency Status.*

- In FY 2011, GSA published a new affirmative purchasing plan. The GSA Green Purchasing Plan sets definitions, standards, and requirements necessary to achieve GSA sustainable acquisition targets, and requires GSA contracting personnel to acquire environmentally preferable products when available and to include green purchasing language in new contracts for services. The sustainable acquisition requirements in the GSA GPP only apply to contract actions in support of GSA operations and using GSA funds.
- In FY 2010, GSA informally reviewed a random sample of 40 building operations maintenance, and janitorial services contracts in GSA-owned Federal buildings to assess their use of green purchasing language. GSA found that 73 percent of contracts surveyed contained the proper green contract provisions.

f. Planning Table. GSA Sustainable Acquisition Targets

SUSTAINABLE ACQUISITION		FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
<b>Mandatory Target for New Contract Actions Meeting Sustainable Acquisition Requirements</b>		<b>95%</b>	<b>95%</b>	<b>TBD</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>TBD</b>
Energy Efficient Products (Energy Star, FEMP-designated, and low standby power devices)	Plan	base	95%	95%	95%	95%	95%	....	95%
	Actual	no data	...	...	...	...	...	...	...
Water Efficient Products	Plan	base	95%	95%	95%	95%	95%	....	95%
	Actual	no data	...	...	...	...	...	...	...
Bio-based Products	Plan	base	95%	95%	95%	95%	95%	....	95%
	Actual	no data	...	...	...	...	...	...	...
Recycled Content Products	Plan	base	95%	95%	95%	95%	95%	....	95%
	Actual	no data	...	...	...	...	...	...	...
Environmentally Preferable Products/Services (excluding EPEAT)	Plan	base	95%	95%	95%	95%	95%	....	95%
	Actual	no data	...	...	...	...	...	...	...
Environmentally Preferable Services	Plan	75%	100%	100%	100%	100%	100%	....	100%
	Actual	73%	...	...	...	...	...	...	...
SNAP / non-ozone depleting substances	Plan	base	95%	95%	95%	95%	95%	....	95%
	Actual	no data	...	...	...	...	...	...	...

SUSTAINABLE ACQUISITION CONTRACT REVIEW	1Q FY 2011 (Actual)	2Q FY 2011 (Actual)	3Q FY 2011 (Planned)	4Q FY 2011 (Planned)
Total Number of Agency Contract Actions	40,508	35,892	40,000	40,000
Total Number of Contract Actions Eligible for Review*	1,133	782	1,000	1,000
Total Eligible Contract Actions Reviewed	57	57	50	50
Number of Compliant Contract Actions	56	53	At least 47	At least 47
Total Percentage of Compliant Contract Actions	98%	93%	At least 95%	At least 95%

This table reports only those contract actions, including task and delivery orders, prepared by GSA in support of GSA operations and resulting in a new obligation of GSA funds. GSA limited its review to contract actions that exceeded \$25,000 and procured products and services in categories with established green purchasing requirements.

## 2.2.7 Goal 7: Electronic Stewardship and Data Centers

### a. Goal Description.

- **By FY 2015, GSA will consolidate 15 regional data centers into three data centers and will eliminate field location server closets through virtualization and centralization** (a 76 percent reduction). GSA will consolidate, virtualize, and retire servers and other IT equipment to reduce space requirements, energy consumption, and GHG emissions of GSA network operations.
- **GSA laptops, desktops, and monitors are 100 percent compliant with Energy Star specifications and power management settings, 100 percent of GSA electronic product acquisitions are EPEAT-registered, and 100 percent of GSA electronic assets are covered by sound disposition practices.** Energy Star is a joint program of the Environmental Protection Agency (EPA) and Department of Energy which establishes minimum standards for energy efficient consumer products. The Green Electronics Council's Electronic Product Environmental Assessment Tool (EPEAT) is an international registry of environmentally preferable IT products.

*Goal Scope.* GSA data center targets include three government operated facilities that house network operations in Kansas City, MO, Fort Worth, TX, and Chantilly, VA. GSA targets exclude data centers that will be eliminated through data center consolidations and seven other data centers that are commercially managed. Commercial data centers are excluded because environmental performance data are not available for these centers.

GSA targets for electronic stewardship include all electronic devices, products, and assets in the GSA inventory for GSA business use. GSA targets do not include electronics acquired for the use of other Federal agencies.

### b. Agency Lead for Goal.

Casey Coleman  
Chief Information Officer

### c. Implementation Methods.

1. **GSA will reduce power consumption and GHG emissions at its data centers.**
  - a. **GSA will install advanced energy meters in 100 percent of its agency-operated data centers and use advanced energy meter data to identify and implement energy-efficiency improvements in power and cooling practices.** GSA will install advanced meters in its Chantilly, VA facility by the end of FY 2011 and then install meters at GSA data centers in Fort Worth, TX and Kansas City, MO. Advanced meters will allow GSA to monitor energy consumption on a minute-by-minute basis for operational control and a weekly basis for management review.

- b. **By 2015, GSA will increase server virtualization so that every GSA-operated data center will be more than 40 percent virtualized.** GSA will maintain its current 97 percent virtualization rate in its Chantilly, VA data center, and it will increase virtualization to 40 percent in its Fort Worth, TX data center and 80 percent in its Kansas City, MO data center. Virtualization allows a single, multi-purpose server to replace several single-purpose servers thus reducing energy consumption. Since FY 2007, GSA has eliminated over 700 servers through virtualization.
  - c. **By FY 2015, GSA will replace servers and other IT assets with more energy-efficient models to achieve a Power Utilization Efficiency (PUE) ratio of 1.8 at all its agency-operated data centers.** PUE is a best practice efficiency measure comparing a data center's total energy utilization to the power delivered to its computing equipment.
- 2. **GSA has printer consolidation policies in place that encourage employees to share printers.** GSA has policies in place that encourage employees to use shared, high-speed printers instead of personal printers. Since the beginning of FY 2011, GSA has reduced its number of network and personal printers by 20 percent. GSA is also increasing its use of digital document management, which will ultimately reduce the need for printers and printing paper use.
  - 3. **GSA uses sustainable practices to manage IT consumables.** GSA requires its printer services contractors to provide prepaid return services and to ensure that toner cartridges are recycled and remaining toner is recycled or disposed of in a manner that complies with all environmental and health and safety laws.

GSA is actively working with industry to include soy and other bio-based toner products on its toner supply contract. GSA is testing the use of non-petroleum based toner in its printers, and it will utilize non-petroleum based toner to the fullest extent possible once it is confident that these toner types are viable alternatives to traditional toner. Until such a time, GSA will continue to use certified recycled toner.

- 4. **GSA requires environmentally sound disposition of excess or surplus electronic products, and tracks disposals to ensure that 100 percent of electronics are disposed of properly.** GSA disposes of IT assets through GSA Xcess, which promotes reuse by marketing surplus or excess government property to other Federal agencies or schools and non-profits through the Computers for Learning program. IT products that are not wanted by this program are sold to the public, to promote re-use.

All IT products that cannot be transferred or sold are recycled: In the Washington, DC metropolitan area, GSA recycles IT devices at the GSA electronics recycling center in Franconia, VA; all other GSA locations use Unicor services. Unicor plans to achieve EPA Responsible Recycling (R2) certification by FY 2013. R2 certification affirms that an electronics recycler adheres to a commonly accepted set of environmentally and socially responsible recycling practices. GSA is working with EPA and other partners to ensure that all electronics purchased by the government are disposed of in an environmentally-responsible manner at the end of their useful life.

*Challenges.* GSA faces challenges in maximizing the environmental performance of its IT assets, products, and devices.

1. Seven GSA data centers are commercially operated and not under GSA's direct control. GSA is currently reviewing its data center contracts to identify opportunities to improve contractor reporting on energy consumption and other environmental performance data.
2. Most GSA servers do not support power management. GSA developed a five-year IT Infrastructure Roadmap to reduce the use of single purpose servers through retirement and virtualization and by moving more GSA applications and data to cloud computing. GSA will replace old servers with Energy Star servers and will ensure that power management features are enabled.
3. GSA has not enforced printer utilization policies and has not uniformly applied power management policies to printers and print servers. The GSA Green Purchasing Plan requires that all new electronic equipment meet EPEAT and Energy Star standards, or hold a FEMP designation. All new printers will have power management features enabled and default settings will be set for double-sided, black ink printing.

*d. Positions.* GSA anticipates that the actions necessary to consolidate data centers and improve agency electronic stewardship can be completed with existing staff.

*e. Agency Status.*

- In FY 2010, GSA published its data center consolidation plan, a technical roadmap and approach to reducing the physical and environmental footprint of GSA IT operations. GSA also completed a comprehensive IT asset inventory that included details on energy consumption, server utilization rates, and opportunities for virtualization.
- In FY 2010, GSA saved approximately 8,383 million BTUs per year by implementing mandatory power management settings on all desktops, laptops, and monitors. All GSA desktops, laptops, and monitors are Energy Star qualified and have power management settings enabled, and all monitors and computers are set to time out or "sleep" after periods of inactivity.
- In early FY 2011, GSA implemented power management settings on existing network printers and multi-function devices.



f. Planning Table. GSA Electronic Stewardship Targets

ELECTRONIC STEWARDHIP and DATA CENTERS		FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	...	FY 20
Percent of electronic product acquisitions (except servers) covered by current Energy Star specifications that must be Energy Star qualified	Plan	100%	100%	100%	100%	100%	100%	...	100%
	Actual	100%	...	...	...	...	...	...	...
Percent of covered electronic product acquisitions that are EPEAT- registered	Plan	95%	95%	95%	95%	95%	95%	...	95%
	Actual	100%	...	...	...	...	...	...	...
Percent of covered electronic product acquisitions that are FEMP- designated	Plan	95%	95%	95%	95%	95%	95%	...	95%
	Actual	no data	...	...	...	...	...	...	...
Percent of agency eligible PCs, laptops, and monitors with power management actively implemented and in use	Plan	100%	100%	100%	100%	100%	100%		100%
	Actual	100%	...	...	...	...	...	...	...
Percent of agency eligible electronic printing products with double-sided printing features in use	Plan	95%	95%	100%	100%	100%	100%		100%
	Actual	30%	...	...	...	...	...	...	...
Percent of electronic assets covered by sound disposition practices	Plan	100%	100%	100%	100%	100%	100%	...	100%
	Actual	100%	100%	100%	100%	100%	100%	...	100%
Percent of agency data centers with advanced meters or sub-meters to determine monthly (or more frequently) Power Utilization Effectiveness (PUE).	Plan	0%	40%	100%	100%	100%	100%	...	100%
	Actual	0%	...	...	...	...	...	...	...
Aggregate reduction in the number of agency data centers	Plan	base	3	5	7	9	12	...	12
	Actual	0	...	...	...	...	...	...	...
Percent of agency data centers operating with an average CPU utilization greater than 65%	Plan	base	55%	60%	65%	70%	75%	...	75%
	Actual	no data	...	...	...	...	...	...	...
Maximum annual weighted average Power Utilization Effectiveness (PUE)	Plan	2.0	1.8	1.7	1.6	1.5	1.4	...	1.4
	Actual	no data	...	...	...	...	...	...	...

## 2.2.8 Goal 8: Agency Innovation and Government-Wide Support

### 2.2.8.1 Agency Innovation: Vendor and Contractor Greenhouse Gas Emissions

- a. *Goal Description.* Section 13 of E.O. 13514 directed GSA, in partnership with the Department of Defense and the EPA, to assess the feasibility of requiring Federal suppliers to report their GHG emissions and using GHG emissions disclosures in the Federal procurement process. Suppliers who disclose their GHG emissions would provide data needed for Federal agencies to make more complete estimates of their Scope 3 GHG emissions by including the emissions generated during production and delivery products and services provided by contractors, or “supply chain” emissions.

In April 2010, an interagency working group led by GSA determined it is feasible for suppliers to voluntarily complete GHG emissions inventories and disclose their GHG emissions data to the Government for use in the Federal procurement process. The working group also identified several technical and policy issues that need to be addressed before supplier GHG emissions disclosures can be used in Federal procurements.

In FY 2011, GSA established the Federal Supply Chain Emissions Program Management Office (PMO) to identify benefits and challenges for Federal vendors and contractors who complete GHG emissions inventories and explore mechanisms to incorporate vendor GHG emissions disclosures in the procurement process. The PMO will sponsor research projects and test pilots to identify benefits and challenges for Federal vendors in completing GHG emissions inventories and explore mechanisms to incorporate vendor GHG emissions disclosures in the federal procurement process. The PMO is coordinating the activities of six sub-working groups:

- The Communications sub-group will develop a toolkit for communicating sustainability information through existing government-wide communication channels.
- The Data Systems sub-group will identify information systems and processes for Federal contractors to use in disclosing their GHG emissions inventories and Scope 1 and 2 GHG emissions data.
- The Federal Training and Supplier Education sub-group will develop a plan for GHG emissions training and education.
- The Harmonization of Standards sub-group will review existing GHG emissions inventory standards and will develop criteria for how industry completes their GHG inventory for Federal reporting.
- The Product Labeling sub-group will develop guidelines to review and select eco-labels for use in the Federal procurement process.
- The Return on Investment sub-group will identify case studies from industry, government and academia that demonstrate the value of completing GHG emissions inventories.

b. *Agency Lead for Goal.*

Steven Kempf  
Commissioner  
Federal Acquisition Service

c. *Implementation Methods.* **GSA will continue to work with industry to develop a process for voluntary disclosure of supply chain GHG emissions to the Federal government for use in agency GHG emissions inventories and the Federal procurement process.**

1. **By September 2011, GSA will help 72 small businesses complete their first GHG inventories.** In FY 2010, GSA partnered with the EPA to launch a pilot program to help small businesses complete GHG emissions inventories. The pilot is a three-year program that requires participating business to develop annual GHG emissions inventories, develop and implement GHG emissions reductions strategies, and review progress towards meeting their reduction goals.
2. **By February 2012, GSA will develop a strategy to encourage Federal contractors to inventory and disclose their GHG emissions data.** GSA will capture lessons learned from the small business pilot and other demonstration projects examining the use of GHG emissions in procurements. GSA will include the results of an ongoing study of practices in other countries that use GHG emissions data in government procurements, including specific metrics, impact on the procurement process, vendor reporting requirements, and sustainability impact.

GSA also will review and incorporate the GHG emissions reporting practices of the top 200 Federal contractors that voluntarily report to the Carbon Disclosure Project (CDP). The CDP is an independent, not-for-profit organization that helps approximately 2,500 organizations in 60 countries voluntarily measure and disclose their GHG emissions. In FY 2010, GSA worked with the CDP to identify the businesses who were among the top 200 Federal contractors and also provided the CDP with GHG emissions data.

3. **GSA will develop a collaborative forum for the Federal government, industry, and academia to address issues in greening the Federal supply chain and provide insights to the Section 13 sub-groups.** GSA is hosting a series of "Sustainability Roundtables" featuring recognized experts in sustainability. GSA held two roundtables in FY 2011.

d. *Positions.* In FY 2011, GSA is dedicating three full-time equivalents (FTE) in the Federal Acquisition Service Office of Acquisition Management to support vendor and contractor emissions reporting efforts. GSA plans to increase to five FTE in FY 2012 and FY 2013.

- e. *Agency Status.* In early FY 2011, GSA and CEQ launched the GreenGov Supply Chain Partnership to work collaboratively with contractors to increase the energy efficiency of their supply chain and reduce their GHG emissions. The GreenGov Supply Chain Partnership provides a venue for Partnership members to share lessons learned and provide mutual assistance in GHG emissions inventory completion and goal setting.

GSA hosted three “listening sessions” through the GreenGov Supply Chain Partnership to obtain Federal contractor feedback on GHG emissions inventory and disclosure practices. GSA has additional sessions scheduled in FY 2011.

#### 2.2.8.2 Government-wide Support

- a. *Goal Description.* GSA provides other Federal agencies with environmentally sustainable products and services, and a variety of innovative tools and expertise to support their GHG emissions reduction targets and other environmental performance goals of E.O. 13514.
1. **GSA will expand its green-only Multiple Award Schedule offerings to provide other agencies with quick and easy access to sustainable products and services.** GSA is systematically reviewing each Schedule to identify opportunities to require new additions to meet sustainability requirements and to phase-out non-green products. GSA will develop green-only product categories if a defined green standard exists and there is sufficient availability of green products.

To date, green-only requirements have been added to product areas in nine schedules and are currently under review in two additional schedules. Green-only product areas meet the requirements of EPA Energy Star and WaterSense and US Department of Agriculture (USDA) BioPreferred eco-labels, contain recycled content, or meet other environmentally preferable standards.

2. **GSA will continue to improve GSA Advantage!® to align with sustainable purchasing requirements.** GSA Advantage!® is an on-line ordering system that provides Federal agencies with instant access to products and services from pre-approved commercial vendors. In FY 2011, GSA added seven new green icons to GSA Advantage!® and deleted six. GSA added new icons for EPA WaterSense and USDA BioPreferred products, products independently certified by the Forest Stewardship Council or by the GreenGuard Environmental Institute, biodegradable products, products containing low or no volatile organic compounds, and products free of EPA primary metals. GSA also arranged for routine data transfers from Green Seal to ensure that only products certified by Green Seal will carry the Green Seal icon in GSA Advantage!®.
3. **By September 30, 2011, GSA will update the Product and Service Codes (PSC) manual for government-wide contract reporting to include new codes for sustainable products.** Sustainable PSC codes will allow the government to track performance against the 95 percent sustainable acquisition goal automatically, using agency and government-wide contract management and reporting systems.

4. **GSA will implement a National Strategy for Electronics Stewardship developed by the Interagency Task Force on Electronics Stewardship**, which is co-chaired by GSA and CEQ. The national strategy, which is expected in June, will outline a comprehensive set of actions that GSA will take to ensure that every electronic product purchased by the Federal government is reused to the maximum practical extent and then recycled in an environmentally responsible manner, regardless of the final user.
5. **GSA will enhance and expand Federal agency use of the GSA Carbon Footprint Tool**. GSA provides a free tool for all Federal agencies to calculate and report their GHG emissions inventory as required by E.O. 13514. In FY 2011, GSA will update the tool to include updated standards for Federal agency reporting of GHG emissions. Also in FY 2011, GSA will begin work to improve dashboards, data management, and analytical capabilities of the tool.

Nine agencies used the Carbon Footprint Tool to prepare their FY 2010 GHG emissions inventories. GSA will continue to work to increase the number of agencies using the tool for Federal GHG reporting.

6. **In FY 2011, GSA will develop tools to help agencies increase telework and reduce workspace requirements**. GSA recently completed a pilot project to create four “Mobility Centers” in its Denver headquarters building. The project transformed 77 cubicles into 130 seats for mobile workers, realizing a 68 percent increase in workspace density. GSA will use the results of this pilot project to develop services that customer Federal agencies can use to improve employee mobility and reduce workspace needs.
  7. **In FY 2011, GSA developed a free, web-based Sustainable Facilities Tool to help other Federal agencies incorporate green building criteria and sustainable design into interior office space**. The tool helps users to compare materials and systems, access design guidance, ask questions, and share knowledge and experiences with other users. The Sustainable Facilities Tool is available at <http://www.sftool.org/>.
- b. *Positions*. GSA dedicates 11 full-time equivalents (FTE) in the Office of High-Performance Green Buildings to supporting government-wide sustainability efforts.

**Section 3: Agency Self Evaluation**

3.1 Key Questions

<b>Does your Sustainability Plan incorporate and align sustainability goals, GHG targets and overarching objectives for sustainability with the Agency Strategic Plan?</b>	<b>No</b>
GSA is currently updating its Strategic Plan for submission with the FY 2013 budget. The updated GSA Strategic Plan will incorporate the new GSA mission and strategic and program performance goals, all of which align with GSA sustainability goals.	
<b>Does it provide annual targets, strategies and approaches for achieving the 2015 and 2020 goals?</b>	<b>Yes</b>
<b>Is the Sustainability Plan consistent with the FY 2012 President’s Budget?</b>	<b>Yes</b>
<b>Does the Sustainability Plan integrate all statutory and Executive Order requirements into a single implementation framework for advancing sustainability goals along with existing mission and management goals, making the best use of existing and available resources?</b>	<b>Yes</b>
<b>Does your plan include methods for obtaining data needed to measure progress, evaluate results, and improve performance?</b>	<b>Yes</b>

3.2 Other Questions for 2011

1. **Did your agency meet by 12/30/10 due date and/or is it now able to demonstrate comprehensive implementation of the EO 13423 Electronic Stewardship goals?**
  - **Acquire at least 95% EPEAT-registered electronics**
  - **Enable Energy Star or power management features on 100% of eligible PCs**
  - **Extends the life and/or uses sound disposition practices for its excess or surplus electronics**

*Yes. GSA met its due date and is able to demonstrate that it has met the three E.O. 13423 electronic stewardship goals.*

2. **Is your agency tracking and monitoring all of its contract awards for inclusion of requirements for mandatory Federally-designated green products in 95% of relevant acquisitions?**

*No. Until the Product and Services Code Manual is updated later this fiscal year, GSA is monitoring compliance through reviews of random samples of applicable contracts. GSA is pursuing corrective action on individual contracts as they are identified non-compliant, but the reviews have not shown any systematic lack of compliance. GSA is taking several*

*measures to improve its compliance monitoring through implementation of its Green Purchasing Plan. See Goal 6, "Sustainable Acquisition," for more information.*

**3. Has your agency completed energy evaluations on at least 75% of its facilities?**

*GSA contracted for third party auditing and commissioning of covered facilities. These evaluations were time consuming, and budgetary constraints made it difficult for GSA to completely evaluate the number of facilities required to meet the goal. GSA is setting up an internal energy and water audit process to expedite the completion these evaluations in order to meet this goal by June 30, 2011.*

**4. Will your agency meet the deadline of October 1, 2012 (EPACT'05 Sec 103) for metering of energy use?**

*Yes. GSA has already met this goal. GSA has standard meters in place that measure electricity, natural gas, and steam usage in all GSA-owned Federal buildings, and GSA has installed advanced meters or awarded contracts for the installation of advanced meters at facilities where practicable.*

**5. If your agency reports in the FRPP, will it be able to report by December 2011 that at least 7% of its inventory meets the High Performance Sustainable Guiding Principles?**

*Yes. GSA will report that at least seven percent of Federal buildings greater than 5,000 GSF and leased facilities greater than 5,000 GSF are in compliance with the Guiding Principles and will report this information in the Federal Real Property Profile by December 2011*

## Appendix 1: Agency Climate Change Adaptation Policy Statement

- I. Purpose. This policy statement establishes an agency-wide directive for the U.S. General Services Administration (GSA) to integrate climate change adaptation planning and actions into its decision-making processes, programs, policies, and operations and assigns responsibility for implementing the climate change adaptation planning requirements contained in Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*. By integrating climate change adaptation strategies into our programs and operations, GSA ensures that it executes its mission and operations securely, effectively and efficiently in current and future climate conditions while contributing to the Federal government's leadership role in sustainability and pursuing the vision of a resilient, healthy and prosperous nation.
  
- II. Background. GSA plays a significant role in procuring space, products and services for the Federal government. GSA provides space for over one million Federal employees in over 9,600 buildings. In fiscal year 2010, GSA had a business volume of \$64 billion, representing over 14 percent of the government's procurement spending. While the scope, severity and pace of future climate change impacts are difficult to predict, it is clear that potential changes could have important impacts on GSA's ability to effectively fulfill its mission, operate its facilities and meet policy and program objectives. GSA already has disaster response and recovery systems for extreme weather events. This planning effort addresses projected incremental climate changes such as sea level rise and changing temperature and precipitation patterns. Through climate change adaptation planning, GSA will develop, prioritize, implement and evaluate actions to mitigate climate change risks and utilize any new opportunities that climate change may bring.
  
- III. Policy.
  - A. GSA shall undertake climate change adaptation planning, in consultation with GSA's Office of Federal High-Performance Green Buildings and implement the results of that planning using best available science and information. GSA shall consider potential climate change impacts when undertaking long-term planning, setting priorities for research and investigations, and making decisions affecting GSA resources, programs, policies and operations.
  
  - B. GSA shall develop and publish an agency-wide Climate Adaptation Plan by June 2012 and update it regularly. The Plan shall include each of GSA's Services and Staff Offices, as appropriate, and incorporate the findings and directives of this policy statement. The Plan will identify how climate change may impact GSA's ability to achieve its mission, programs, policies and operations. The Plan will identify and prioritize actions and establish a mechanism to evaluate progress and continue to improve GSA's capacity to effectively adapt to current and future changes in the climate.
  
  - C. In a manner consistent with its mission, each of GSA's Services and Staff Offices shall review existing programs, operations, policies and authorities to: identify potential long term impacts of climate change on the organization's areas of responsibility; prioritize and implement response actions that promote operational resiliency in response to potential changes; and continuously assess and improve capacity to adapt to current and future climate change impacts and threats. This review shall be coordinated with GSA's Adaptation Team, General Counsel and other pertinent GSA organizations.



- D. GSA shall fully implement the climate change adaptation Implementing Instructions issued by the White House Council on Environmental Quality (CEQ) under Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance Section 16*, and other applicable authorities.
- E. GSA will apply the guiding principles and the flexible framework for agency adaptation planning found in the March 4, 2011 *Federal Agency Climate Change Adaptation Planning Implementation Instructions and Support Document* issued by CEQ and aligned with the October 5, 2010, *Progress Report of the Interagency Climate Change Adaptation Task Force: Recommended Actions in Support of a National Climate Change Adaptation Strategy* issued by the Interagency Climate Change Adaptation Task Force.
- F. GSA will coordinate with other agencies and interagency efforts, including the Interagency Climate Change Adaptation Task Force, on climate change adaptation issues that cut across agency jurisdictions, including areas where national adaptation plans are being or have been developed, and will identify a process for sharing climate change adaptation planning information throughout the agency and with the public.

IV. Responsibilities.

- A. The GSA Administrator, through the Office of Federal High-Performance Green Buildings, has established an Adaptation Team to research, draft and implement our agency's Climate Adaptation Plan. The Adaptation Team includes representation from various GSA Offices as appropriate.
- B. The Agency Senior Climate Adaptation Official is responsible for ensuring implementation of all aspects of this policy. This policy does not alter or affect any existing duty or authority of individual components or offices.
- C. The Heads of Service and Staff Offices (HHSO) and Regional Administrators (RA), in consultation with GSA's Office of Federal High-Performance Green Buildings, shall review their existing programs, operations, policies and authorities to identify potential impacts of climate change on the organization's areas of responsibility. In doing so, they shall: prioritize and implement response actions; identify mitigation measures; and continuously assess and improve capacity to adapt to current and future changes in the climate. In addition, HHSOs and RAs shall ensure service and office plans are updated annually and fully coordinated with GSA's Adaptation Team, General Counsel and other pertinent GSA organizations. HHSOs and RAs will also ensure organizational plans are closely coordinated with appropriate partner agencies, stakeholders and integrated with overall interagency efforts, including the Interagency Climate Change Adaptation Task Force for those issues that cut across agency jurisdictions, including areas where national adaptation plans are being or have been developed.

V. Applicability. This policy applies to all GSA program actions, including but not limited to:

- A. Real property acquisition through Federal construction, purchase, or lease, including lease extensions;
- B. Public buildings design and construction;
- C. Public buildings alteration;
- D. Public buildings operation;
- E. Property Disposal;
- F. Continuity of Operations and disaster support policy, planning and operational coordination;
- G. Emergency Support Function-7 co-lead responsibilities under the National Response Framework; and
- H. Acquisition of supplies and services for the Federal customer

VI. Effective Date. This Policy Directive is effective immediately and will remain in effect until it is amended, superseded or revoked.

  
Martha Johnson  
Administrator

  
Stephen Leeds  
Senior Sustainability Officer

## Appendix 2: Responses to Climate Change Adaptation Guidance Questions

### 1. How is climate change likely to affect the ability of your agency to achieve its mission and strategic goals?

*GSA's mission is to use expertise to provide innovative solutions for our customers in support of their missions and by so doing foster an effective, sustainable, and transparent Government for the American people.*

*GSA's vision is to eliminate its impact on the natural environment and use its government wide influence to reduce the environmental impact of the federal government to the maximum extent possible. GSA will minimize its consumption of energy, water, and other resources and will eliminate all waste and pollution in all GSA operations and activities. GSA will use its purchasing power to drive the market to produce a wider variety and greater number of products, services, and workspaces that are more sustainable.*

*GSA's three strategic goals reinforce the agency's drive to achieve its vision. **Innovation, customer intimacy, and operational excellence** are dimensions of performance in which GSA must excel in order to influence customer behavior, green the federal supply chain, and drive the market for sustainable products and services.*

*The following table provides an initial assessment of the anticipated impacts of climate change on GSA's strategic goals. GSA's existing climate mitigation efforts support climate adaptation planning. Climate adaptation planning will factor as a new dimension in agency strategic planning and into each strategic goal listed below via internal training, client outreach and mobility/alternative workplace strategies.*

Strategic Goal	Climate Impacts affect on Strategic Goal	Steps already taken to manage the effects of climate change
<p><b>Innovation:</b>            GSA will be an innovation engine for the government. GSA will use its government wide perspective and expertise, centralized procurement and property management role, and unique statutory authorities to take appropriate risk that others are not positioned to take. GSA will test innovative ideas within its own operations and offer those solutions to other agencies through its government-wide contracting and policy-making authorities.</p>	<p><b>EXTREME EVENTS</b> - wildfire , drought, extreme precipitation, flooding</p>	<p>-Inclusion of GHG emission inventory considerations in FEMA Emergency Response BPA's is a high priority performance goal.            - FAS is advancing its supply chain to increase products available for GHG emissions reductions, encouraging (and in some cases requiring) vendors to supply products through multiple awards schedules (MAS) i.e. Schedule 03FAC, Schedule 899, and the CPES BPA            -To minimise the destruction from floods, GSA is installing less of its mechanical and electrical equipment in basements.            -Emergency generators installed are larger and provide backup service to more equipment.            -In addition to servers, the IT infrastructure in buildings has numerous battery backups.            -Telework practices are in place for extreme weather events.</p>
	<p><b>Supplies/Services/Supply Chain:</b> need to offer more products and services which "leap frog" existing technologies by being resilient, robust and low GHG emitting for inventory considerations and an agile supply chain.  <b>Workplaces:</b> need to offer workplaces which are resilient- passively survivable to support COOP.  <b>Policies:</b> Flexible and adaptable to respond to changing situations, and allow greatest degree of local implementation to meet requirements. Use of telework to mitigate climate impacts.</p>	<p>-GSA continues work on GHG emission reductions /climate mitigation to dovetail with adaptation efforts i.e. energy efficiency in buildings, supply chain and IT infrastructure (move to cloud computing).            Life safety is a primary project driver.            -The P-100 Facilities Standard requires dual-fuel boilers.            -GSA participates in numerous code-writing organizations as well as other organizations with significant influence on policy.            -Significant floods and other disasters have become the topic of design and engineering conferences raising awareness so future designs can be improved.</p>
	<p><b>LONG TERM INCREMENTAL CHANGE</b> - sea level rise, subsidence, change in intensity of weather events, permafrost, coastal erosion, storm surge, warmer/colder average temperatures</p>	<p><b>Supplies/Services/Supply Chain:</b> need to offer supplies and services which "leap frog" existing technologies by being resilient, robust and low carbon for incremental change beyond stop gap response to extreme events.  <b>Workplaces:</b> need real estate solutions which make federal sites robust and are coordinated with local adaptation planning for resiliency.            -need to include life safety and importance of securing the federal investment as drivers for future projects            -need to coordinate with building code and standard making bodies for climate change durability factors            -need to determine what steps will future ready real property assets- intentionally planning and combining mitigation efforts with adaptation at proper scale and other potential solutions - i.e. mobility, telework  <b>Policies:</b> need to develop in concert with non-Governmental entities to harness leading-edge</p>

U.S. General Services Administration  
Appendix 2: Agency Responses to Climate Change Adaptation Questions

Strategic Goal	Climate Impacts affect on Strategic Goal	Steps already taken to manage the effects of climate change	
	thinking and methods.		
<b>Customer Intimacy</b> GSA will seek an intimate understanding of and resonance with its customers in order to serve with integrity, creativity, and responsibility. GSA will develop strategic partnerships with industry and with other federal agencies to develop new and innovative tools for a more effective government.	<b>EXTREME EVENTS</b> - wildfire , drought, extreme precipitation, flooding	-The FAR has some existing guidance for emergency acquisition in regard to Presidential disaster declarations (FAR 26.2) -GSA provides support for FEMA in the event of national disasters. -GSA has ongoing COOP planning efforts, exercises, and preselected/stocked alternative command locations.	
	<b>Supplies/Services/Supply Chain:</b> need to prepare proper supply/service offerings as well as acquisition processes for extreme events. <b>Workplaces:</b> need to develop processes with our customers to address their space needs in event of disruption of utilities. <b>Policies:</b> need to provide flexibility and quick response to changes. -need to publish flexibilities and authorities available under extraordinary circumstances to better serve the customer.		
	<b>LONG TERM INCREMENTAL CHANGE</b> - sea level rise, subsidence, change in intensity of weather events, permafrost, coastal erosion, storm surge, warmer/colder average temperatures		-GSA's Public Building Service (PBS) is ready to accomplish projects and provide services to support agency adaptation and resiliency efforts through our Request for Work Authorization (RWA) process. -As climate adaptation and resiliency become a consideration in the initial design and retrofit of commercial properties, associated costs will be captured by GSA's existing appraisal process and incorporated into rental rates.
	<b>Supplies/Services/Supply Chain:</b> need to prepare our supply/service offerings and acquisition processes to supporting our customer's ability to adapt to incremental climate change. <b>Workplaces:</b> need to partner/coordinate/support customer plans to adapt to incremental change -need to inform customers of impacts new criteria and potential change to value of space <b>Policies:</b> need to be aware of changing customer needs to a greater degree through continual outreach and collaborative opportunities.		

Strategic Goal	Climate Impacts affect on Strategic Goal	Steps already taken to manage the effects of climate change
<p><b>Operational Excellence:</b>            GSA strives for performance excellence, continuous improvement, and the elimination of waste in all of its operations. GSA is committed to developing the acquisition workforce and deploying electronic tools to support the reform of federal contracting, and originating and fine-tuning the government wide policies necessary for a truly modern federal government</p>	<p><b>EXTREME EVENTS-</b> wildfire , drought, extreme precipitation, flooding</p>	<p>-Plans are in place for responsive acquisition processes            -Coordination with GHG mitigation efforts via GSA's suppliers supply chain through the GreenGov Supply Chain Partnership program            -GSA vendors are located all over the country. Supply chains are cross continent and Acquisition Centers are in multiple regions. If there is an impact in one area of the world, GSA Global Supply Service can continue operations.            -PBS has building-specific Occupant Emergency Plans that are shared with each of our clients.            -PBS service contracts require the contractor to prepare contingency plans.            -Building Operating Plans address emergency planning, hazmat response and contingency planning including energy load curtailment plans (control of shading, closing doors, turning off lights etc.) - need enhancement and customer coordination.            -GSA's existing project delivery process can address design solutions related to potential impacts and couple with an investment strategy to implement those changes over time.</p>
	<p>Operational processes in place need to be tuned to incorporate climate change factors which increases complexity for strategic decision making.            -Technology: use of G.I.S., climate, local planning overlays            -Knowledge: climate analysis expertise, systems approach            -Organization: awareness training, integration  <b>Supplies/Services/Supply Chain:</b> need acquisition processes which are lean and appropriate for climate adaptation from an agile supply chain.  <b>Workplaces:</b> COOP processes may need additional coordination with our tenants due to frequency of extreme events  <b>Policies:</b> Flexible and adaptable to respond to changing situations, and allow greatest degree of local implementation to meet requirements. Support and leadership to customers in fielding new technologies and advanced concepts.</p>	
	<p><b>LONG TERM INCREMENTAL CHANGE-</b> sea level rise, subsidence, change in intensity of weather events, permafrost, coastal erosion, storm surge, warmer/colder average temperatures</p>	<p>PBS has a building-specific, long-term planning process as documented in our Asset Business Plans. The development of these plans is informed by other processes such as periodic building evaluations, energy audits and the Environmental Risk Index.</p>
<p><b>Supplies/Services/Supply Chain:</b> same as above with incorporation of demand planning of customer agencies.  <b>Workplaces:</b> same as above with incorporation of demand planning of customer agencies.            -need a process to identify the most vulnerable properties and define criteria to inform strategic planning and funding proposals.  <b>Policies:</b> Same as above, with the addition of long-term collaboration to identify trends.</p>		

**2. How can your agency coordinate and collaborate with other agencies to better manage the effects of climate change?**

*GSA has identified the following Federal agencies that are likely to face similar climate change impacts and management challenges to GSA.*

Agency	How Climate Change Management Challenges are Similar
Any agency with sites/facilities especially USACE, DOS, DOD, VA	“Bricks and mortar” real property and sites across multiple climate zones
DOD	Responsive acquisition strategies, services, goods for extreme events-similar to forward operations
Defense Logistics Agency (DLA), VA, and NASA	Similar acquisition vehicles and supply chains

*GSA is already collaborating with the following other agencies to develop strategies to adapt to climate change impacts that cut across agency mission and operations.*

Agency	Existing Collaboration/Project
USGCRP	Initial stages of USGCRP using GSA as a pilot to assist in translating climate analysis to inform strategic planning for real property.
RRB, NRC, DOJ, EPA R2	Customers have already contacted GSA to determine how their workspaces will be impacted by climate change and responsibilities
DOE	Defining the difference in approach between programmatic agency adaptation and site/facility adaptation – optimized by regional federal coordination with local/State/regional entities in lieu top down, centralized
VA	Discussing with GSA to determine how similar adaptation approaches/resources for climate change and responsibilities








GSA has identified the following opportunities for new or additional collaboration activities with other agencies to leverage resources and develop consistent adaptation strategies.

Agency	Potential Collaboration/Project
GSA's Federal Customers of supplies/services/policies	Develop acquisition and offerings for supplies/services/policies which assist customers to adapt to climate change- initial collaboration sought through the Adaptation Planners for each agency
GSA's Federal Tenants	Develop workspace and workplace strategies which support customers to be able to execute their federal mission- initial collaboration sought through the Adaptation Planners for each agency
Science Agencies – NOAA, USGCRP, NASA etc...	Regionally coordinated climate analysis for “bricks and mortar” real property and sites across multiple climate zones
USACE, NIST, DOE	Defining and implementing research initiatives to inform building code and standard making bodies regarding moving from the use of historical data incorporating projected climate factors into energy analysis, structural loading (wind, precipitation), infrastructure planning for adaptive capacity, building envelope performance etc.
USACE, NIST and DOE	Water availability and consumption analysis



### Appendix 3: Draft Agency Energy and Sustainability Scorecard




**OMB SCORECARD on SUSTAINABILITY/ENERGY**  
General Services Administration: Stephen Leeds, Senior Counsel to the Administrator

FY 2010 STATUS (As of January 2011)	PROGRESS	COMMENTS
 Green <ul style="list-style-type: none"> <li>• <u>X</u> Submitted comprehensive inventory as 2008 baseline for Scope 1&amp;2 GHG Reduction Target of <u>28.6%</u> by 2020<sup>1</sup> ___ Inventory submission late or incomplete (Y)</li> </ul>	<p><u>Actions taken since January 1, 2010:</u></p> <ul style="list-style-type: none"> <li>• Added 280 hybrids to the internal fleet; placed AFVs at locations with AF access; seeking permission to install wide-scale vehicle monitoring equipment.</li> <li>• Launched Federal Electric Vehicle pilot.</li> <li>• 801 employees participated in the first phase of the Personal Sustainability Plan challenge, an employee engagement program for employees to learn about sustainability.</li> <li>• Developed FAS, PBS, and staff office implementation plans to tailor the Green Purchasing Plan requirements and processes to the types of procurements the different divisions perform.</li> <li>• Selected 18 Test-Bed Technologies for enhanced measurement and verification as part of the Green Proving Ground program. Technologies include forward leaning and emerging HVAC, lighting, power generation, building envelope, water, and solar water heating systems.</li> <li>• Issued revised internal travel policy requiring use of tele- and video-conferencing over travel and siting of conferences to minimize participant travel. Reduced agency travel budget by \$10 million in FY 2011 and an additional \$3 million in FY 2012.</li> </ul> <p><u>Planned actions for next six months:</u></p> <ul style="list-style-type: none"> <li>• Reduce EPAAct 701 waiver requests by 10 percent for FY11; continue the process to seek permission to install vehicle monitoring equipment on a wide-scale; begin a Vehicle Allocation Study with the goal of moving the fleet further towards advanced vehicles and decreased petroleum consumption, to be completed by March 2012.</li> <li>• Continue Personal Sustainability Plan challenge into additional phases.</li> <li>• Assess at least 7% of owned buildings greater than 5,000 GSF (a minimum of 82 buildings) and at least 7% of leases greater than 5,000 GSF (a minimum of 338 leases) for compliance with the Guiding Principles; develop a LEED EB:</li> </ul>	<ul style="list-style-type: none"> <li>• GSA continued to align its management systems, employees, and culture around the ZEF goal, particularly through the rollout of the Personal Sustainability Plan challenge and Sustainability Management System.</li> <li>• GSA continues to demonstrate and expand its government-wide leadership in sustainability with its efforts to pilot electric vehicles in the Federal fleet, green the supply chain, advance cloud computing, and help others meet electronics stewardship goals. However, GSA missed several of its Scope 3 FY10 reduction targets, including employee business travel, commuting, and T&amp;D loss.</li> <li>• GSA revised its Scope 3 T&amp;D loss reduction targets down in its FY11 SSPP submission. The methodologies for accounting for renewable energy procurement in the final accounting guidance were different from those in the Scope 3 target setting tool, resulting in unachievable targets.</li> </ul>
 Green <ul style="list-style-type: none"> <li>• <u>X</u> Submitted comprehensive inventory as 2008 baseline for Scope 3 GHG Reduction Target of <u>44%</u> by 2020<sup>1</sup> ___ Inventory submission late or incomplete (Y)</li> </ul>		
 Green <ul style="list-style-type: none"> <li>• Reduction in energy intensity in goal-subject facilities compared with 2003: <u>X</u> <u>16.1%</u> and on track for 30% by 2015 (G) ___ at least 12% (Y)</li> </ul>		
 Green <ul style="list-style-type: none"> <li>• Use of renewable energy as a percent of facility electricity use: <u>X</u> Total of <u>12.5%</u> from renewable electricity sources including at least 2.5% from <u>new</u> sources (thermal, mechanical, or electric) (G) ___ 5% from any renewable source (Y)</li> </ul>		
 Green <ul style="list-style-type: none"> <li>• Reduction in potable water intensity compared with 2007 is at least: <u>X</u> <u>8.7%</u> and on track for 26% in 2020 (G) ___ 4% (Y)</li> </ul>		
 Green <ul style="list-style-type: none"> <li>• Reduction in fleet petroleum use compared to 2005 is at least: <u>X</u> <u>22.5%</u> and/or on track for 20% by 2015 (G) ___ ≥8% (Y)</li> </ul>		
 Green <ul style="list-style-type: none"> <li>• Sustainable green buildings: <u>5.18%</u> of buildings sustainable <u>11.26%</u> GSF of inventory sustainable</li> </ul>		

Footnote: <sup>1</sup>Agency status on achieving GHG metrics in FY2010 will be assessed in July 2011.

FY 2010 STATUS (As of January 2011)	PROGRESS	COMMENTS
	<p>O&amp;M volume certification program; identify 50 GSA owned properties that will begin the certification process.</p> <ul style="list-style-type: none"> <li>• Continue to integrate GHG emissions data into performance management processes through Sustainability Management System and use of dashboards showing monthly GHG emissions data from buildings and quarterly data from business travel.</li> <li>• Begin using Telepresence centers, scheduled for June 8 rollout at GSA regional headquarters, in lieu of travel.</li> </ul>	

U.S. General Services Administration  
Appendix 3: Draft Agency Energy and Sustainability Scorecard

		
<p>Agency:</p> <ul style="list-style-type: none"> <li>• Developed a base year and a complete, comprehensive 2010 GHG inventory for Scopes 1&amp;2 and submitted to CEQ and OMB by 1/31/2011.</li> <li>• Developed a base year and a complete, comprehensive 2010 GHG inventory for Scope 3 and submitted to CEQ and OMB by 1/31/11.</li> <li>• Reduced energy intensity (Btu/GSF*) in EISA goal-subject facilities by at least 15 percent compared with 2003 and is on track for 30 percent reduction by 2015.</li> <li>• Uses at least 5 percent electricity from renewable sources as a percentage of facility electricity use &amp; at least 2.5 percent of facility electricity use comes from new sources (post-1990). <i>(Thermal and mechanical renewable can be included in the 2.5 percent new requirement, but not the 5 percent goal; i.e., an agency meets all new sources requirement with thermal or mechanical energy (2.5 percent) but would still need an additional 5 percent from renewable electricity sources.)</i></li> <li>• Reduced water intensity by at least 6 percent from final approved 2007 baseline and is on track for 20 percent reduction by 2015.</li> <li>• Achieved a 10 percent reduction in petroleum use in its entire vehicle fleet compared to 2005 and/or is on track for 20 percent reduction by 2015.</li> <li>• Demonstrates implementation of <i>Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (GP)</i> for new, existing and leased buildings; and is on track to meet 15% goal by 2015 by reporting that at least 5% of buildings &gt;5,000 GSF meet GP as reported in the Federal Real Property Profile (FRPP).</li> </ul>	<p>Agency:</p> <ul style="list-style-type: none"> <li>• Developed a base year and 2010 GHG inventory for Scopes 1&amp;2 but was unable to deliver completed inventory on time to CEQ and OMB</li> <li>• Developed a base year and 2010 GHG inventory for Scope 3 but was unable to deliver completed inventory on time to CEQ and OMB.</li> <li>• Reduced energy intensity (Btu/GSF) in EISA goal-subject facilities by at least 12 percent compared with 2003.</li> <li>• Uses at least 5 percent renewable energy from electric, thermal or mechanical sources to power facilities and equipment; but less than half was obtained from new sources (post-1990) or part of the requirement was met with thermal and mechanical renewable energy.</li> <li>• Reduced water intensity by at least 4 percent from final approved 2007 baseline.</li> <li>• Achieved at least 8 percent reduction in petroleum use in the entire vehicle fleet compared to 2005.</li> <li>• Incorporates Guiding Principles into all new design contracts for construction, major renovations and leases and at least 5 percent of GSF of its building inventory over 5,000 GSF meets GP as reported in FRPP.</li> </ul> <p>*GSF= Gross Square Footage</p>	<p>Agency:</p> <ul style="list-style-type: none"> <li>• Did not develop a base year and 2010 GHG inventory for Scope 1&amp;2.</li> <li>• Did not develop a base year and 2010 GHG inventory for Scope 3.</li> <li>• Did not reduce energy intensity (Btu/GSF) in EISA goal-subject facilities by at least 12 percent compared with 2003.</li> <li>• Did not use at least 5 percent renewable energy from electric, thermal or mechanical sources to power facilities and equipment.</li> <li>• Did not reduce water intensity by at least 4 percent from final approved 2007 baseline.</li> <li>• Did not achieve at least 8 percent reduction in petroleum use in its entire vehicle fleet since 2005.</li> <li>• Cannot demonstrate compliance with GP on new construction, major renovations, or leases; and/or less than 5 percent of building inventory, either by number of buildings or GSF, over 5,000 GSF meets GP as reported in FRPP.</li> </ul>