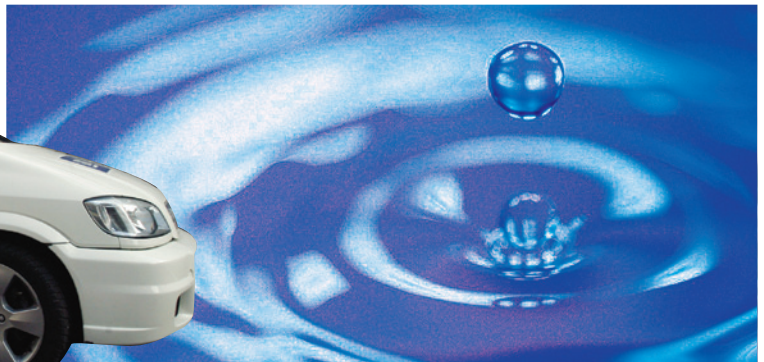




U.S. Environmental Protection Agency Strategic Sustainability Performance Plan

FY 2010–FY 2020

June 2, 2010





STRATEGIC SUSTAINABILITY PERFORMANCE PLAN

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SECTION 1: AGENCY POLICY AND STRATEGY

I. AGENCY POLICY STATEMENT

The U.S. Environmental Protection Agency (EPA or Agency) has integrated a commitment to reduce its carbon footprint and protect the environment into its core programs, including budget planning, operations, and management systems. EPA will meet and exceed its key priorities and sustainability goals, which cover the following issues:

- Greenhouse gas (GHG) and energy reductions;
- Fleet efficiency;
- Water conservation;
- High-performance, sustainable buildings;
- Regional and local planning;
- Pollution prevention, waste reduction and diversion;
- Electronics stewardship; and
- Sustainable acquisition.

The Agency also recognizes the need to continue to serve as a model for other Federal agencies in reducing its impact on the environment. In the coming years, EPA plans to invest human and financial resources to improve its energy and environmental performance in a cost-effective manner.

As EPA's Senior Sustainability and Chief Acquisition Officer, I am committing the Agency's leadership and every EPA employee to actively participate in the implementation of the Agency's Strategic Sustainability Performance Plan (SSPP). In conjunction with EPA's Chief Financial Officer, Chief Information Officer, Senior Real Property Officer, General Counsel, and all Program Offices and Regions, EPA commits to meeting the SSPP's goals in the most comprehensive and cost-effective manner possible.

A handwritten signature in black ink, appearing to read "Craig E. Hooks", written over a horizontal line.

JUN 02 2010

Craig E. Hooks
EPA Senior Sustainability Officer



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II. SUSTAINABILITY AND THE AGENCY'S MISSION

EPA Administrator Lisa P. Jackson has established seven key priorities for the Agency:

- Taking action on climate change;
- Improving air quality;
- Assuring the safety of chemicals;
- Cleaning up our communities;
- Protecting America's waters;
- Expanding the conversation on environmentalism and working for environmental justice; and
- Building strong state and tribal partnerships.

Although the Agency has focused on these important challenges in the past, nowhere is it more important to model environmental stewardship than at EPA's own facilities.

In supporting the Agency's mission to protect human health and the environment and to demonstrate leadership in environmental stewardship, EPA is committed to actively managing its operations and activities in a compliant and sustainable manner. This commitment is supported by environmental management systems (EMS) at all appropriate organizational levels to address the sustainability goals presented in this SSPP through Agencywide targets and performance metrics.

EPA's mission is carried out in more than 200 leased office facilities and more than 30 laboratories. Laboratories use significantly more energy and present greater environmental challenges than offices. For EPA, the goal is to manage laboratories to accomplish the Agency's mission while minimizing the impact of these operations on the environment and the surrounding communities. As the Agency enters its fifth decade and looks to modernize facilities, the Administrator's seven priorities will be integrated into daily operations and practices.



III. GREENHOUSE GAS REDUCTION GOALS

On January 4, 2010, EPA submitted its Scope 1 and 2¹ GHG emissions reduction target to the Council on Environmental Quality (CEQ) and the Office of Management and Budget (OMB) in accordance with the requirements of Executive Order (E.O.) 13514. The Agency’s goal is to reduce its combined Scope 1 and Scope 2 GHG emissions 25 percent by Fiscal Year (FY) 2020 from a FY 2008 baseline of 140,911 metric tons of carbon dioxide equivalents (MTCO_{2e}), as shown in Table 1-1.

Table 1-1: Estimated Scope 1 and 2 Emissions*

EPA’s Scope 1 Emissions	Estimated FY 2008 Baseline (MTCO _{2e})
Stationary fuel (e.g., natural gas, fuel oil, propane, kerosene) combustion at reporting facilities	21,762
Fugitive emissions in reporting facilities from refrigerant leakage in air-conditioning equipment	6,591
Direct emissions from all Agencywide fuel consumption in EPA’s fleet (e.g., passenger cars, minivans, trucks) and tactical vehicles (e.g., trailers, generators, boats)	5,566
Fugitive emissions in reporting facilities from fire-suppression equipment	57
Fugitive emissions from EPA’s fleet and tactical vehicles (e.g., refrigerant leakage from air-conditioning equipment)	507
Process emissions from laboratory fume hood testing	302
Process emissions from National Vehicle Fuel Emissions Laboratory vehicle and engine testing	175
Process emissions from furnace testing at the High Bay laboratory in Research Triangle Park (RTP), North Carolina	2,818
Process emissions from RTP incinerator/waste-handling facility’s stack	49
Total Scope 1 Emissions	37,827
EPA’s Scope 2 Emissions	
Purchased electricity, steam, hot water, and chilled water in reporting facilities	103,084
Total Scope 2 Emissions	103,084
Total EPA Scope 1 and Scope 2 Emissions	140,911

*This list represents EPA’s inventory of Scope 1 and Scope 2 GHG emissions as reported to CEQ and OMB in January 2010. On March 30, 2010, CEQ issued updated guidance requiring agencies to account for emissions associated with transmission and distribution (T&D) losses from purchased heating and cooling as part of Scope 2 GHG emissions. EPA will account for these emissions (which the Agency had been including in its Scope 3 emissions inventory), along with other sources of Scope 2 GHG emissions, in January 2011 when reporting FY 2008 and FY 2010 GHG emissions inventory to CEQ and OMB.

EPA’s Scope 1 and 2 GHG reduction plan is based on existing and ongoing efforts to improve energy efficiency at its reporting laboratories. The Agency will focus on making

¹ Scope 1 emissions are direct GHG emissions from sources that are owned or controlled by the Agency. Scope 2 emissions are direct GHG emissions resulting from the generation of electricity, heat, or steam purchased by the Agency.



mechanical system improvements during infrastructure replacements, identifying new energy efficiency projects through energy assessments and re-commissioning, focusing on preventive maintenance, and making operations and maintenance (O&M) a priority in existing facilities.

Even as the Agency reduces energy consumption within targeted² laboratories, it will continue to mitigate the environmental impacts associated with its electricity use by continuing to purchase green power or renewable energy credits (REC) for 100 percent of EPA's electricity needs. The Agency will use the results of a National Onsite Renewable Energy Study, completed for it in FY 2009, to make decisions regarding onsite renewable energy generation through technologies such as ground source heat pumps (GSHP). The Agency is working to reduce fuel consumption and the GHG emissions associated with its vehicles through several fleet management initiatives, including "right-sizing" the Agency's fleet, acquiring low GHG-emitting vehicles, promoting alternative fuel vehicles (AFV) and filling stations, increasing the fleet's average miles per gallon, and educating and encouraging fleet managers and employees to reduce both vehicle miles traveled and fuel consumption.

A Broad View of Scope 3

EPA will focus on the following Scope 3 GHG emissions sources in FY 2010:

- GHG emissions associated with employees' air and ground business travel and with employee commuting;
- GHG emissions associated with the Agency's contracted waste disposal (solid waste and wastewater); and
- T&D losses related to purchased electricity.

To estimate the GHG emissions associated with employees' air travel, EPA will use the U.S. General Services Administration's (GSA) Travel Management Tool. The Agency plans educate its employees on business travel alternatives, which will translate into a reduction in associated Scope 3 GHG emissions. The Agency has also used CEQ's tool to estimate employee commuting-related emissions and set a preliminary target for reductions by FY 2020.

To calculate the GHG emissions associated with its solid waste disposal, EPA will estimate the total mass of waste produced Agencywide and use the CEQ Reporting Portal Tool to quantify the resulting GHG emissions. To calculate GHG emissions associated with wastewater disposal, EPA researched and collected data on the GHG emissions associated with the energy used to transport and treat wastewater from its facilities. This computation was used to verify the estimate for calculating wastewater disposal emissions using the CEQ Reporting Portal Tool.

To reduce GHG emissions associated with T&D losses of purchased electricity, EPA will focus on reducing demand for purchased electricity, using the same strategies that it plans to use to reduce Scope 1 and 2 GHG emissions.

² Targeted laboratories are those that have the opportunities for the greatest return on investment and payback.



EPA will include Scope 3 target emissions associated with energy use in non-reporting facilities and with energy used to deliver potable water to EPA facilities as data become available and as the Scope 3 requirements are increased by OMB/CEQ. EPA is working with GSA to develop recommendations for tracking and reducing GHG emissions related to the supply of products and services to the Federal Government through vendors and contractors. Over time, the Agency plans to develop data collection methods to quantify emissions associated with its outsourced environmental remediation activities.

IV. PLAN IMPLEMENTATION

The SSPP is not EPA's first Agencywide strategy for sustainability; rather, it is built on years of EPA experience in reducing its environmental footprint. In October 2008, the Agency released the Energy and Environmental Performance, Leadership, Accountability, and (Carbon) Neutrality Plan (E2PLAN) as a path to meet and exceed then current Federal requirements in energy efficiency, water conservation, green buildings, renewable energy, transportation, and EMSs. That plan was the culmination of a number of individual strategies for energy and water conservation, sustainable buildings, and other policies. The SSPP builds on that baseline and outlines a refined focus on GHG reductions.

A. Internal Coordination and Communication

EPA has demonstrated a firm commitment from the Administrator and SSO, with support from the Agency's Assistant Administrators, to integrate the GHG reduction goals of the SSPP into all of the Agency's Programs, facilities, and operations.

To ensure coordination and communication among the key individuals and offices responsible for implementing the SSPP, EPA has established a process for ongoing input and feedback. By developing and issuing its EMS objectives, targets, and metrics, EPA has established a coordination and communications mechanism for setting targets and monitoring performance in support of environmental compliance, stewardship, and sustainability.

EPA created an Executive Steering Committee as the premier management committee charged with overseeing the development of the SSPP. Next, a Technical Advisory Group (TAG) was convened to develop the SSPP and includes representatives from all of EPA's Program Offices, Regions, and key administrative bodies. Figure 1-1 is a snapshot of EPA's communications strategy for developing the SSPP.

Annually, the Agency will review and adjust sustainability targets and metrics to reflect the Executive Steering Committee's determination of current Federal mandates. The Agency's EMS objectives, targets, and metrics will be adjusted accordingly.

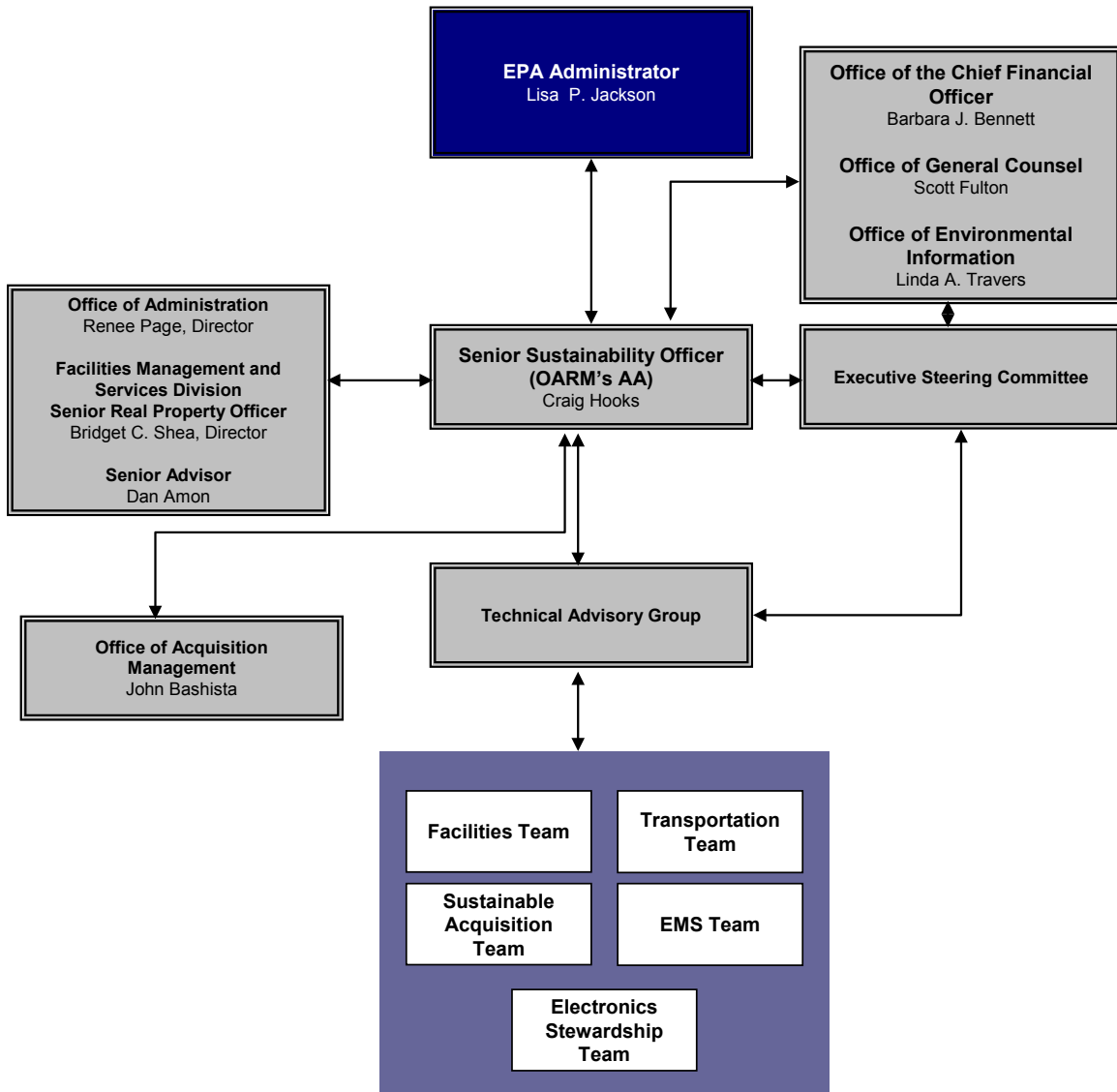


Figure 1-1: Communications Chart

B. Coordination and Dissemination of the Plan to the Field

EPA has a number of channels for distributing the SSPP to employees and senior managers who are directly and indirectly responsible for assisting with implementation. The Agency already provides updates on implementation of E.O. 13514 and other sustainability requirements through an internal e-newsletter that is distributed to key contacts. The Administrator further emphasized her position via an EMS commitment statement distributed in February 2010. EPA will post a copy of the plan on the Agency’s intranet, as well as on the EPA Office of Administration’s Web site, www.epa.gov/greeningepa.

EPA also will inform senior managers, including Assistant Administrators, Regional Administrators, and Laboratory Directors, of the development and contents of the SSPP, as well as their responsibilities for its implementation.



C. Leadership and Accountability

EPA's support for environmental stewardship and sustainability is grounded in the Agency's mission. The SSO for the Agency is the Assistant Administrator for OARM, who reports directly to the Administrator. The SSO chairs the Executive Steering Committee, composed of Assistant Administrators and Senior Regional Management, which was established to:

- Ensure the ongoing suitability and appropriateness of the Agency's response to the goals established in the SSPP; and
- Provide guidance on continual improvement of the Agency's operations and sustainability initiatives.

D. Agency Policy and Planning Integration

The Executive Steering Committee and the TAG will play critical roles in continuing to evaluate the appropriateness and sustainability of Agency policy for compliance. Input from these groups will be used to review, maintain, and adjust goals and targets in the Agency's SSPP, as appropriate. This process will be facilitated by the SSO and OARM, and will be conducted within standard review cycles to ensure timely revision and issuance of annual SSPP updates.

In addition to representatives from each Program Office and other EPA Offices, the SSPP TAG includes members of the Agency's strategic planning staff, who ensure that overall EPA strategic planning goals are incorporated and reflected in the goals of the SSPP. EPA will ensure that annual updates to the SSPP include feedback from the appropriate managers to integrate overall Agency goals and objectives.

E. Agency Budget Integration

EPA's annual budget planning process includes reviewing facility needs; facility master planning incorporates resource efficiency, low-impact development, and other sustainability strategies.

F. Methods for Evaluation of Progress

EPA will use current reporting systems to assess progress toward the goals contained in the SSPP. The Agency currently collects data quarterly on energy consumption and water use, and evaluates facility-specific targets in these areas annually. Solid waste generation and recycling data, for both owned and leased facilities, are collected to determine waste diversion rates. Transportation data are tracked using the Automotive Statistical Tool (AST) database; transportation initiatives and fuel use are evaluated using the Agency's Alternative Fuel Compliance Program (AFCP). Performance information for other targets and goals is acquired through an annual data call.

Performance reports will be provided periodically to the SSO and the Executive Steering Committee, along with recommendations for action and adjustments to the SSPP as appropriate.



V. EVALUATING RETURN ON INVESTMENT (ROI)

EPA has well-established processes to evaluate and prioritize capital improvement projects for its buildings and facilities based on financial and non-financial criteria.

Through EPA's Five-Year Capital Investment Plan, Energy Conservation Plan, Water Conservation Strategy, and Buildings and Facilities Capital Budgeting Process (also known as the Buildings and Facilities [B&F] Project Ranking Process), the Agency ranks projects based on financial criteria, including initial investment, energy and operational cost savings, paybacks, and potential for reducing facility maintenance.

A. Economic Lifecycle Cost/ROI

EPA has several processes to evaluate the economic lifecycle costs and ROI related to new facilities, major renovations, mechanical system upgrades and replacements, and other facility projects.

For new major EPA facilities, GSA-owned buildings being renovated for EPA, or buildings leased by GSA from private landlords for EPA, the Agency performs extensive energy modeling to ensure compliance with the requirement that new buildings and major renovations perform 30 percent better than the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1 standard. During this process, EPA weighs the cost of incremental mechanical system and building envelope investments against the benefits in terms of energy cost savings to the taxpayer. The Agency pursues energy efficiency performance beyond the 30 percent better than ASHRAE standard when it can be achieved in a lifecycle cost-effective manner.

Through the B&F Project Ranking Process, EPA's Architecture, Engineering, and Asset Management Branch (AEAMB) receives potential projects from the Agency's Regions, Programs, and Headquarters (after they have been prioritized using the strategies described above) and places them in one of the following categories:

- Energy conservation (includes water conservation and green building projects);
- Engineering/planning studies;
- Environmental compliance;
- Health and safety;
- Program requirements;
- Repair and upkeep; and
- Space alteration.

AEAMB verifies the prioritized project list and assigns a 0 to 100 numeric value based on the B&F Project Ranking Process scoring criteria. Weighted scoring criteria provide a basis for analyzing Agencywide and organization-specific priorities.

B. Social Costs and Benefits

The National Environmental Policy Act (NEPA) is one of the two key mechanisms that consider social cost and benefits of EPA's capital investments in facilities. The NEPA review process is not limited to ecological effects, such as air quality and water quality,



but includes aesthetic, cultural, historic, health, and socioeconomic impacts as well. In future years, the Agency will expand the NEPA process to incorporate social costs and benefits associated with sustainability initiatives.

NEPA regulations apply to all EPA facility construction projects, regardless of size. During the NEPA process, the Agency reviews projects to:

- Determine the appropriate level of NEPA review for a proposed construction project;
- Define the significant issues to be analyzed through information gathering, scoping meetings, and public participation;
- Evaluate project alternatives, including the proposed action and possible mitigation measures, to determine whether their environmental impacts are significant, not significant, or none at all; and
- Develop documentation to assist the public and decision-makers in evaluating the proposed action and alternatives.

To perform a comprehensive review, EPA is updating its GreenCheck and review processes to ensure that they incorporate the following steps to evaluate social factors:

- Consider renewable energy investments in areas with energy security and reliability issues;
- Consider environmental justice issues when siting facilities;
- Focus on water conservation efforts near high-drought areas to reduce EPA's impacts on overburdened water supplies; and
- Ensure energy conservation efforts are promoted in areas with higher pollution levels.

C. Environmental Costs and Benefits

In addition to financial metrics, EPA evaluates each project or initiative to understand its contribution to the environmental performance goals of E.O. 13514, E.O.13423, the Energy Independence and Security Act of 2007 (EISA), and the Energy Policy Act of 2005 (EPAct 2005). As described in detail in Section 2, the Agency considers and includes in projects, where appropriate, key elements of these environmental mandates, including GHG emission reductions, energy efficiency, renewable energy use, sustainable buildings, water conservation, stormwater management, indoor environmental quality, and waste management.

In addition to financial metrics, EPA tracks each individual facility project against the goals and requirements of E.O. 13514, E.O. 13423, EISA, and EPAct 2005, using the GreenCheck form. EPA developed GreenCheck specifically to track key elements of the E.O.s and other environmental mandates, including:

- GHG impact;
- Energy consumption/intensity and renewable energy use;
- High-performance, sustainable buildings;
- Water consumption/intensity;



- Stormwater management;
- Indoor environmental quality; and
- Waste management.

Moreover, EPA owns a small number of facilities that have been identified as having potential historic significance; therefore, EPA complies with all Federal, state, and local laws and regulations regarding the preservation of cultural resources.

D. Mission-Specific Costs and Benefits

EPA is realigning its real estate portfolio management process, capital budgeting process, and other facilities processes to support the Agency's seven strategic goals (which align with the goals of E.O. 13514):

- Taking action on climate change;
- Improving air quality;
- Assuring the safety of chemicals;
- Cleaning up our communities;
- Protecting America's waters;
- Expanding the conversation on environmentalism and working for environmental justice; and
- Building strong state and tribal partnerships.

Currently, AEAMB evaluates the impact of each project submitted based on how it contributes to EPA's seven strategic goals.

E. Operations and Maintenance and Deferred Investments

One of EPA's greatest challenges is to improve the O&M of its facilities, especially laboratory operations. Currently, EPA maintains facility-level O&M plans for its owned facilities. The structure of the O&M plans varies based on the facilities' missions, functional activities, building inventory composition, and evaluation results. Each facility's plan documents its operating parameters, maintenance plans and procedures, requirements, and schedule.

EPA tracks data related to the Federal Real Property Council's key performance measures—utilization, condition indices, mission dependencies, and annual O&M costs. The Agency's operations performance is measured by its level of compliance with the environmental and energy criteria established in E.O. 13423, EPAct 2005, and EISA, as documented in EPA's Agencywide EMS objectives, targets, and metrics, as well as in the E2PLAN.

The Agency uses a condition index (CI), derived from the facility condition assessments, to qualitatively assess the current state of its facilities. EPA tracks the percentage of office and laboratory space occupied versus the design capacity, referred to as the facility utilization index. The vacancy rate derived from this calculation is tracked on an asset level and used as part of EPA's annual performance measures.



The Agency also tracks recurring maintenance, utility, cleaning and janitorial, roads and grounds, and ongoing security operating costs. These operating costs are benchmarked with those of the private sector for office and laboratory space and used as part of EPA's annual performance measures. The Agency classifies its owned and direct leased assets into the following categories: mission critical, mission dependent, not critical, or not mission dependent. EPA strives to categorize all assets as mission critical or mission dependent; therefore, if it is determined that an asset no longer meets these criteria, the Agency will consider disposing of it through appropriate means.

In 2010, EPA will begin piloting a nationwide program to improve the quality of O&M across its building portfolio. To support this effort, the Agency has developed Building Management Plan Guidelines (BMPG), described in detail in Section 2, to test in several facilities.

F. Climate Change Risk and Vulnerability

EPA recognizes that its community and infrastructure may need to cope with severe weather events; therefore, the Agency will identify vulnerable facilities and systems to develop an adaptation strategy. EPA's Security Management Division (SMD) in OARM has an established Continuity of Operations (COOP) Plan that addresses ways the Agency can resume operations in a rapid and efficient manner following an emergency. The COOP Plan provides guidance for, and facilitates preparation of, site- and activity-specific plans and procedures that support EPA during an emergency situation. The objectives of the COOP Plan are:

- Support execution of EPA's essential functions;
- Reduce disruptions to essential Agency operations;
- Protect essential equipment, records, and other assets needed to support EPA's essential functions;
- Minimize damage to and loss of EPA resources;
- Provide organizational and operational stability;
- Facilitate decision-making; and
- Provide support for the physical protection of information and equipment for EPA's critical infrastructure.

As part of the security process, EPA identified essential support functions and personnel and developed lists of the vital records and databases necessary to continue to perform its essential support function from a COOP relocation site. The Agency will continue to assess current vulnerabilities and future risks, and develop a risk inventory to document all the ways EPA's operations are vulnerable to climate change. EPA will evaluate each sustainability project against this risk inventory. Projects that mitigate the risk will be highlighted, and the mitigation strategy will be documented. The risk inventory will provide the input for assessing both mitigation and adaptation scenarios in facing these risks. EPA will formulate an adaptation strategy and integrate climate change risks and vulnerabilities into its existing COOP framework after further guidance is provided by the Climate Change Adaptation Workgroup.



VI. TRANSPARENCY

EPA has long worked to share with internal and external audiences the information learned in pursuing sustainability. Its intranet serves as a secure portal for internal communications, resources, technical assistance, and information sharing among employees. EPA's external Web site on its sustainable facilities and practices (www.epa.gov/greeningepa) publicizes all annual progress toward meeting energy efficiency, water conservation, green buildings, renewable energy, and pollution prevention goals. The SSPP and associated performance reports will be posted on that site, along with subsequent annual updates.

In addition, EPA is working on the following actions:

- Publishing government information online;
- Improving the quality of government information;
- Creating and institutionalizing a culture of open government; and
- Creating an enabling policy framework for open government.

In response to OMB's Open Government Directive, issued December 8, 2009, EPA established an Open Government Plan that describes a framework for increased transparency and engagement of stakeholders. The Agency will work to measure and evaluate how its open government activities are promoting its mission and strategic goals. EPA also created an open government Web page (<http://www.epa.gov/open/>) as a gateway for obtaining information on Agency activities and for receiving public feedback on EPA's efforts. This effort is furthered by the launch of <http://www.openepa.ideascale.com>, which enables the public to make suggestions, present new ideas, or vote and comment on others' ideas.

EPA will use the open.gov Web page to post information regarding the Agency's progress and performance with respect to achieving the goals and metrics outlined in the SSPP.



SECTION 2: PERFORMANCE REVIEW AND ANNUAL UPDATE

I. SUMMARY OF ACCOMPLISHMENTS

1. Scope 1 & 2 Greenhouse Gas Reduction

As shown in Figure 2-1, EPA has reduced its GHG emissions considerably since FY 2003. In FY 2009, as a direct result of energy efficiency improvements, the Agency reduced these emissions from energy consumption at its reporting facilities by 15,529 MTCO₂e—approximately 10 percent—compared with the FY 2003 baseline. Taking into account its extensive green power and REC purchases, the Agency reduced GHG emissions by 85,298 MTCO₂e (approximately 61 percent) in FY 2009 compared with FY 2003. EPA follows the Climate Leaders Protocol, which allows GHG emissions to be adjusted for green power and REC purchases.

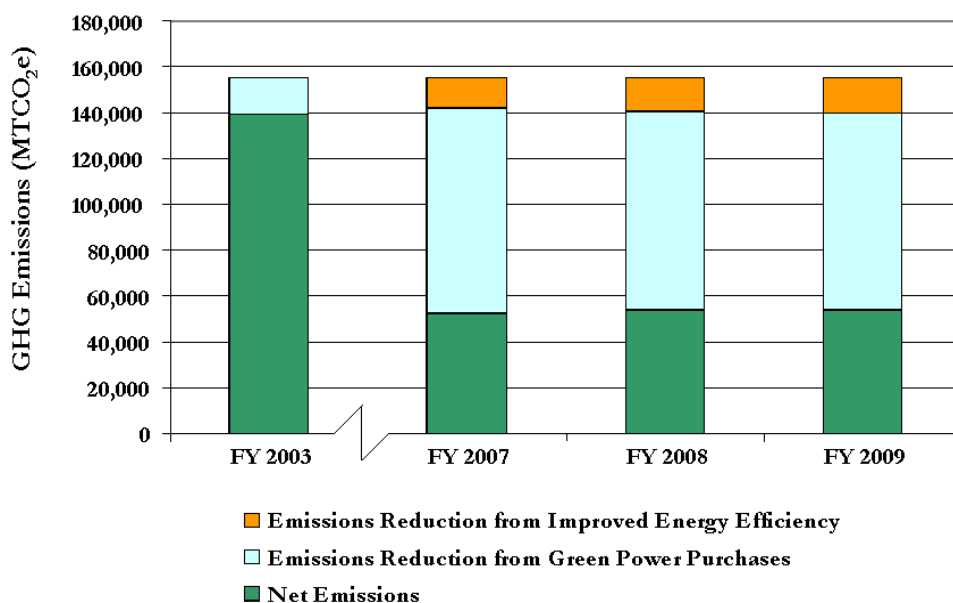


Figure 2-1: GHG Emissions Reductions Compared with the FY 2003 Baseline

In September 2006, EPA became the first major Federal agency to offset 100 percent of its Agencywide annual electricity consumption with green power and REC purchases, and it has continued to do so since. The Agency has also purchased enough green power to offset 100 percent of its electricity use through the end of FY 2010 and has purchased 80 percent of the RECs needed to offset electricity use in FY 2011.

In January 2009, EPA commissioned a feasibility study of potential onsite renewable energy projects in its reporting laboratories. The study, completed in September 2009, evaluated solar, wind, and GSHP projects and concluded that the Agency could generate 5.5 percent of its FY 2003 baseline energy consumption through onsite renewables. The study confirmed that GSHP systems are the most economical renewable technology to reduce fossil fuel use at EPA facilities. The Agency has installed a number of onsite renewable energy projects: solar awnings, solar arrays, solar hot water heaters, and “solar walls,” as well as GSHPs. These systems collectively generate 8.5 billion British thermal



units (BBtu), or 0.59 percent of EPA’s FY 2003 energy consumption baseline. The avoided GHG emissions from these projects represent 0.41 percent of the Agency’s total FY 2008 Scope 1 and 2 GHG emissions.

EPA’s recent successes in reducing GHG emissions from its vehicle fleet include:

- Tested and promoted advanced fuel-cell technology during FY 2008 and FY 2009 with the hydrogen fuel cell Chevy Equinox, producing zero direct emissions;
- Increased FY 2009 alternative fuel consumption to highest levels since before the baseline year of FY 2005; and
- Reduced petroleum consumption by 23 percent in FY 2009 from the baseline year, meeting the requirement of E.O. 13423 a full 6 years early.

2. Scope 3 Greenhouse Gas Reduction

EPA has taken a phased approach to quantifying and managing the identified sources of Scope 3 GHG emissions. The Agency has accounted for the following categories of Scope 3 GHG emissions:

- **Employee Business Travel:** The Green Travel Working Group (GTWG), chaired by the Office of the Chief Financial Officer (OCFO), has done extensive work on “greening” EPA business travel. The GTWG, established in summer 2009 as a budget and GHG planning exercise, is developing policies and approaches (e.g., videoconferencing, smart travel, green meetings) to reduce expenses and Scope 3 GHG emissions associated with Agency travel and to measure the resulting economic and environmental benefits;
- **Employee Commuting Emissions:** EPA gathered existing employee commuting data from several Regional and Program Laboratories, including Headquarters (HQ), Regions 2, 3, 4, 9, and the RTP campus in North Carolina, and provided studies, findings, and advice on how to quantify employee commuting nationwide. Using these data, EPA calculated a rough estimate for GHG emissions associated with employee commuting nationwide, recognizing that regional differences can be significant; and
- **Emissions from T&D Losses from Purchased Electricity:** EPA applied the conversion factors in the Federal Emergency Management Program (FEMP) March 3, 2010, Federal GHG Accounting and Reporting Draft Guidance to calculate Scope 3 emissions associated with T&D losses from purchased electricity.

3. Develop and Maintain Agency Comprehensive Greenhouse Gas Inventory

In January 2008, EPA voluntarily began developing a GHG emissions inventory to better understand and manage the environmental impacts of its day-to-day operations. In May 2009, the Agency formally became a Climate Leaders Partner and, as part of this commitment, began developing a comprehensive Inventory Management Plan (IMP) that transparently documents the Agency’s management systems and inventory development processes. EPA also is required to establish a long-range GHG emissions reduction



target and to report its GHG emissions annually to Climate Leaders to demonstrate progress in meeting the Agency targets.

To develop its initial inventory, EPA followed the *GHG Inventory Guidance* developed by the Climate Leaders Program. EPA's initial GHG emissions inventory quantified Scope 1 and Scope 2 stationary emissions associated with energy consumption at the Agency's 34 reporting facilities for three of the six major GHGs—carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O)—and accounted for the efforts that EPA had made to offset, or “adjust,” the emissions through green power and REC purchases.

In FY 2009, EPA expanded the inventory to include estimated CO₂, CH₄, and N₂O emissions resulting from energy consumption in the Agency's non-reporting facilities, fuel consumption in its fleet vehicles, and fugitive emissions of hydrofluorocarbons (HFC) and perfluorocarbons (PFC) associated with building air-conditioning and refrigeration equipment. EPA's initial inventory used FY 2003 as the baseline to align with the annual energy reduction requirements in E.O. 13423 and EISA. Thus, the Agency was well prepared when, in October 2009, E.O. 13514 established the first comprehensive Federal requirements for GHG emissions quantification and management. EPA's Scope 1 and 2 GHG emissions, as reported in January 2010, are described in Table 2-3.

4. High-Performance Sustainable Design/Green Buildings

EPA has been “greening” its real estate portfolio since the early 1990s. The Agency has been striving for “green” since before the U.S. Green Building Council (USGBC) launched its Leadership in Energy and Environmental Design (LEED[®]) Green Building Rating System. All EPA major new buildings acquisitions initiated since 1997, whether owned or leased through GSA, have achieved LEED for New Construction (LEED-NC) Silver or Gold certification (see Table 2-1). In addition, three of EPA's large, leased office buildings have achieved LEED for Existing Buildings (LEED-EB) Gold or Platinum certification in the past 2 years (see Table 2-2).



Table 2-1: EPA Facilities with LEED-NC Certification

Facility	Region	Square Feet	Certification		
			Version	Level	Date
EPA-Owned Facilities					
RTP, NC–National Computer Center	4	100,922	2.0	Silver	Jan 2005
RTP, NC–Childcare	4	24,225	2.1	Silver	Mar 2008
Cincinnati, OH–Annex 2	5	42,400	2.1/2.2	Gold	Dec 2008
Gulf Breeze, FL–Building 67	4	9,048	2.2	Silver	Apr 2009
GSA-Owned or -Leased Facilities Occupied by EPA					
Chelmsford, MA–New England Regional Laboratory	1	70,440	1.0	Gold	Apr 2003
Kansas City, KS–Science & Technology Center	7	71,955	2.0	Gold	Aug 2003
Arlington, VA–Potomac Yard One	HQ	309,179	2.1	Gold	Jun 2006
Arlington, VA–Potomac Yard Two	HQ	95,938	2.1	Gold	Jun 2006
Denver, CO–Region 8 Headquarters	8	248,849	2.1	Gold	Sep 2007
Total		972,956			

Table 2-2: EPA Facilities with LEED-EB Certification

Facility	Region	Square Feet	Certification		
			Version	Level	Date
GSA-Owned or -Leased Facilities Occupied by EPA					
Arlington, VA–Potomac Yard One	HQ	309,179	2.0	Gold	Jul 2008
San Francisco, CA–Region 9 Headquarters	9	227,745	2.0	Gold	May 2009
Seattle, WA–Region 10 Headquarters	10	141,094	2.0	Platinum	Nov 2009
Total		678,018			

At the end of FY 2009, 8.2 percent* of the buildings in EPA's projected FY 2015 Federal Real Property Profile (FRPP)³ inventory met the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (Guiding Principles).

EPA has three carbon-neutral facilities in its inventory. The Agency's first carbon-neutral laboratory building, the Robert S. Kerr Environmental Research Center in Ada, Oklahoma, installed a GSHP system, uses variable air volume (VAV) laboratory ventilation to reduce fossil fuel use onsite, and purchases RECs to offset its remaining electricity use. EPA's all-electric Region 7 Office in Kansas City, Kansas, which has earned the ENERGY STAR[®] label, purchases enough RECs to offsets its conventional energy use. EPA's Gulf Breeze, Florida, laboratory complex, also an all-electric facility, purchases enough RECs to offset its conventional electricity use.

* Calculated by number of buildings, but including only buildings that exceed a 5,000 Gross Square Feet (GSF) threshold.

³ EPA's FRPP is the inventory of buildings that EPA owns or directly leases from a private landlord. All of EPA's FRPP buildings are laboratories.



5. Regional and Local Planning

EPA considers the overall impact of new facilities on surrounding communities and their local environments in an effort to promote sustainable locations and to strengthen the vitality and livability of the communities in which those facilities are located. As a result, the Agency strongly encourages reducing or eliminating potential environmental impacts by promoting the use of green design and planning principles that are inherent in its mission—protecting human health and the environment. A number of Agency strategies, guidelines, and processes ensure compliance with E.O. 13514, E.O. 13423, EPLA 1992, EPLA2005, and EISA.

In FY 2010, EPA's Smart Growth Team worked with GSA, the U.S. Department of Transportation (DOT), and the U.S. Department of Housing and Urban Development (HUD), in coordination with the Department of Homeland Security (DHS) and the Department of Defense (DOD), to publish recommendations, according to Section 10 of E.O. 13514, that address sustainable strategies for Federal facility siting.

In FY 2008 and again in 2009, the Agency revised and updated its Architecture and Engineering (A/E) Guidelines to incorporate sustainable siting and transportation planning. These guidelines serve as a working policy document to be used during new construction and major renovation projects. EPA also incorporated sustainable principles and provisions into the lease acquisition process by creating the Best Practices (Environmental) Leasing Provisions (BPLP). The BPLP integrates EPLA 2005, E.O. 13423, EISA, the Guiding Principles, and LEED principles into standard lease language to be addressed during the solicitation for offers.

6. Water Use Efficiency and Management

In January 2007, E.O. 13423 instituted the first specific numeric water conservation goals for Federal agencies and called for each agency to reduce water intensity by 2 percent per year through FY 2015, for a total reduction of 16 percent from an FY 2007 baseline year. For EPA, that baseline water use was 133.6 million gallons, or 35.0 gallons per gross square foot (GSF). The Agency's water use in FY 2009 was 119 million gallons, and its water intensity was 31 gallons per GSF, a reduction of 11.3 percent relative to the FY 2007 water intensity baseline (see Figure 2-2) that far surpassed the required 4 percent reduction.

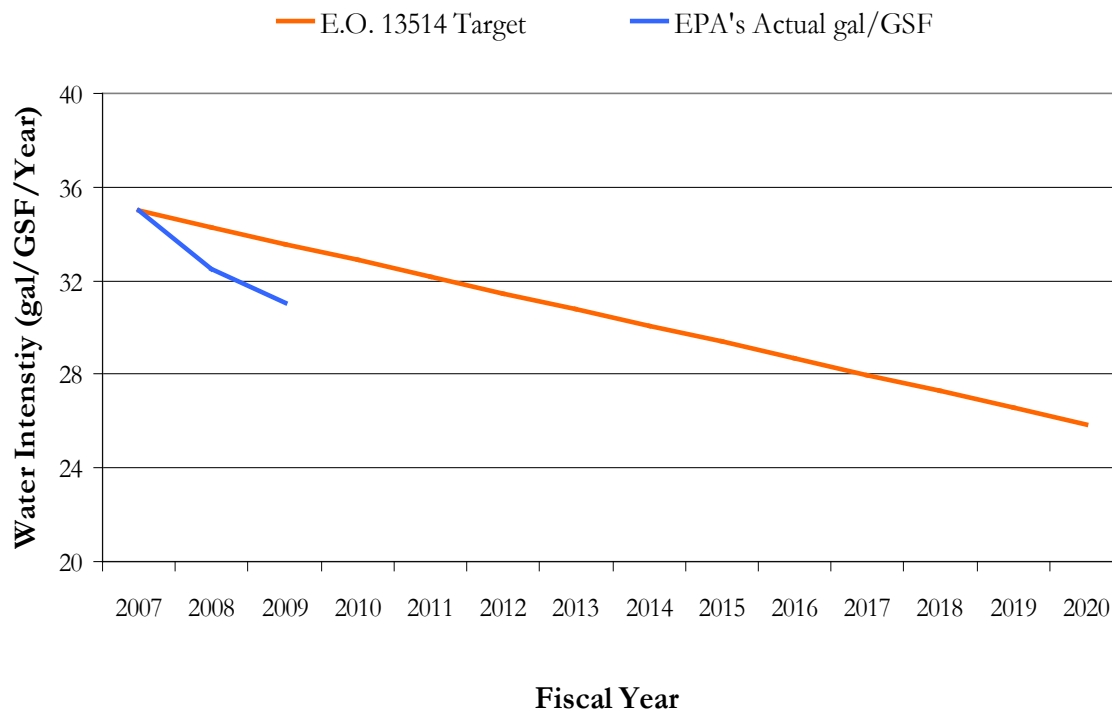


Figure 2-2: EPA Water Intensity Relative to E.O. 13514 Goals

In FY 2008, EPA developed its first formal Water Conservation Strategy, based on years of experience in water conservation, to ensure the Agency as a whole could meet the E.O. 13423 water reduction goals. The strategy set out a rough timetable for implementing water conservation projects at individual facilities and estimated the potential water reductions and savings on utility costs from each potential project.

In October 2009, E.O. 13514 extended 2 percent annual water conservation goals, and EPA updated its Water Conservation Strategy to remain on track to meet the new requirement for Federal agencies to reduce water intensity 26 percent by FY 2020.

In FY 2009, EPA focused efforts on several water conservation initiatives: irrigation system elimination or operational improvements; air handler condensate recovery; steam sterilizer retrofits; vacuum pump replacements; and restroom fixture retrofits or replacements. The Agency completed water efficiency projects representing 3.6 million gallons of savings, or nearly 1 gallon per GSF per year.

Stormwater Management Accomplishments

As with water conservation, EPA voluntarily took steps to improve stormwater management at Agency facilities prior to any Federal requirement. Many EPA facilities currently incorporate design features that reduce the volume and intensity of wet weather peak flows leaving the property, reduce the occurrence of combined sewer overflow, and increase the amount of water retained onsite to maintain the natural hydrology of groundwater, streams, and wetlands. Stormwater management projects provide such benefits as decreases in runoff most efficiently using a combination of techniques and technologies. Examples of successful EPA stormwater management projects include:



- **Wet weather green infrastructure master planning:** In early FY 2010, EPA completed a stormwater management retrofit site master plan at the Andrew W. Breidenbach Environmental Research Center (AWBERC) in Cincinnati, Ohio. That 20-acre site is currently 50 percent impervious. This master plan follows the requirements of EISA Section 438 Guidance issued December 4, 2009;
- **Pervious paving:** In FY 2009, EPA completed a 97-space parking lot with pervious paving at the Edison, New Jersey, laboratory. The Agency completed other smaller pervious parking lot projects at a Chapel Hill, North Carolina, laboratory, and pervious parking additions at the Office of Research and Development (ORD) laboratory in Athens, Georgia;
- **Rain gardens and bioretention areas:** In FY 2009, EPA installed a rain garden and a rain barrel at the entrance to its Environmental Science Center in Fort Meade, Maryland. Rain gardens and bioretention systems are also used at EPA HQ in Washington, DC; in Edison, New Jersey; and at the Agency's RTP campus in North Carolina;
- **Green roofs:** In FY 2009, EPA installed a 2,600-square-foot green roof at the Narragansett, Rhode Island, laboratory. In addition, the Cincinnati AWBERC Annex 2 (EPA-owned) has an 8,300-square-foot green roof; and four major GSA-provided facilities—EPA's Regional Offices in Denver (19,200 square feet), Seattle (7,400 square feet), and Boston (8,800 square feet), and a HQ satellite building in Arlington, Virginia (1,700 square feet)—also have green roofs; and
- **Rainwater collection and reuse:** EPA collects rooftop runoff in large cisterns and stores the water in manufactured tanks or built underground storage areas. The collected rainwater is used for toilet flushing and cooling tower makeup water at EPA's Kansas City, Kansas, Science and Technology Center (STC); toilet flushing at the Gulf Breeze Computational Science Building in Florida; and landscape irrigation at the Federal Triangle HQ in Washington, DC.

7. Pollution Prevention and Waste Elimination

Hazardous Material and Chemical Use Reductions

EPA encourages best practices in chemical management, such as procurement controls and efficient chemical tracking, to minimize the purchase of toxic or hazardous chemicals and ensure that chemicals are used up or “adopted out” before they expire. The chemical management targets and metrics in EMSs across all appropriate laboratory facilities establish baselines for “priority” chemicals and ozone-depleting substances (ODS) and also promote reduction of specific chemicals and mercury thermometers.

The Agency actively encourages its laboratories to regularly review existing analytical methods to determine whether more environmentally preferable options are available. EPA laboratories have implemented a variety of practices to analyze environmental samples using less solvent, acid, and other reagents. Nearly half of EPA's laboratories have implemented chemical adoption programs in which the laboratories identify unneeded chemicals in their inventories and donate them to local high schools, universities, and other organizations. In addition, many laboratories operate onsite solvent recovery and reuse systems.



Recycling and Waste Diversion

All EPA facilities have established comprehensive waste reduction programs and recycle typical items: such as high-grade and mixed paper; corrugated cardboard; and glass, plastic, and aluminum containers. Many facilities also recycle fluorescent bulbs, toner and ink jet cartridges, “technotrash” (e.g., CDs, diskettes, DVDs, video/audio tapes), scrap metal, wood, and batteries. Several facilities also compost food waste from cafeterias and other food sources.

EPA’s estimated waste diversion rate for non-hazardous solid waste (excluding construction and demolition waste and electronics) for FY 2009 was 51 percent. By 2010, the Agency had exceeded the 45 percent waste diversion goal that EPA set under E.O. 13423 and already exceeds the 50 percent requirement of E.O. 13514. The Agency’s waste diversion rate is based on available data; it does not include data from all of EPA’s major facilities. However, recent efforts have increased the number of EPA facilities that are able to collect and report both trash and waste diversion data, from 10 facilities in FY 2007 to 18 facilities in FY 2009.

Over the past 5 years, EPA has conducted recycling and pollution prevention (P2) assessments at all of its major office and laboratory facilities, documenting waste reduction practices, recommending areas for improvement, and discussing barriers to data collection. The Agency compiles best practices from each facility, shares them with other facilities on a recycling intranet site, and posts them to the Internet at www.epa.gov/greeningepa/.

Construction Waste Diversion and Recycled Content Building Materials

EPA real property policies and documents require use of the Comprehensive Procurement Guidelines for recycled materials, biobased products, building products from local areas, and consideration of the reuse of historic structures to capture their “embodied energy.” EPA’s A/E Guidelines, BPLP, and GreenCheck process also require construction projects that involve areas of more than 20,000 square feet to achieve 75 percent construction and demolition (C&D) waste diversion; projects that involve areas of less than 20,000 square feet must achieve 50 percent C&D waste diversion.

Recently completed EPA green buildings, both FRPP inventory and outside the FRPP, have achieved excellence in C&D diversion, as described below:

- EPA’s Region 1 Office in Boston, a GSA-owned historic renovation completed in December 2009, diverted more than 75 percent of C&D waste for recycling, reused 99 percent of the historic structure, and retained some historic fixtures, including marble partitions from the restrooms;
- The Agency’s Computational and Geospatial Sciences Building in Gulf Breeze, Florida, which earned LEED Silver 2.2 certification for New Construction, diverted 702 cubic yards of material from landfills during construction, achieving a 73 percent diversion rate; and
- During construction of the Annex 2 building of EPA’s AWBERC laboratory in Cincinnati, Ohio, 924 cubic yards, or 96 percent, of C&D waste was diverted from landfills.



Other Pollution Prevention Achievements

EPA encourages its facilities to adopt green landscaping practices to reduce the amount of chemicals used outdoors. For example, approximately 70 percent of EPA's landscaped facilities have incorporated native plants, which are better able to withstand local pests and conditions. EPA uses a variety of non-chemical approaches (e.g., geotextiles and mulch) to control weeds. Some EPA locations included clauses in their leasing contracts to prohibit the use of toxic chemicals; others modified their landscaping contracts to discourage over-application of pesticides and herbicides.

About 75 percent of the Agency's major facilities collect and recycle spent fluorescent bulbs. In addition, EPA is moving toward using low-mercury bulb alternatives. In 2005, 58 percent of the Agency's reporting facilities were using conventional bulbs, but at the end of FY 2009, only 37 percent were using them. All facilities donate or recycle electronic equipment at the end of its useful life (refer to the Electronic Stewardship section of this plan).

8. Sustainable Acquisition

Over the past year, EPA's Office of Acquisition Management (OAM) has established a greening Federal procurement by establishing a Green Purchasing Plan (GPP) as part of the Agency's *Contracts Management Manual* (CMM). The GPP promotes a preference for using environmentally preferable products and services produced and performed in an environmentally responsible manner, as well as the responsible distribution, maintenance, reuse, and disposal of such products and services.

OAM held several training courses on green procurement for Agency personnel to educate them about EPA's GPP. This training directly helped increase the percentage of sustainable contracts.

OAM's mandated Quality Assessment Plan (QAP) for contracts requires regular oversight of green procurement issues, including compliance with the GPP, collection of vendor certifications, and data integrity. OAM managers ensure compliance with the GPP by performing periodic, systematic audits consisting of file reviews.

9. Electronic Stewardship and Data Centers

Over the past several years, EPA has launched a series of initiatives to support energy management, environmentally preferable purchasing, and sound recycling electronics Agencywide.

In FY 2008, EPA instituted a centralized seat management program for approximately 12,000 users, which accounts for about 50 percent of its desktop computer assets (i.e., desktop and laptop computers, monitors, and imaging equipment). This program, known as Customer Technology Solutions (CTS), ensures that all HQ locations and Field Offices are using equipment that is:

- Environmentally preferable (i.e., Electronic Products Environmental Assessment Tool [EPEAT] registered and ENERGY STAR qualified), and



- Enabled with environmentally friendly settings (e.g., duplex printing, power management), and is recycled in an environmentally safe manner.

In FY 2007, the Agency established a blanket purchase agreement (BPA) for information technology (IT) acquisitions. The BPA ensures the delivery of EPEAT-registered desktops, notebooks, and monitors. The BPA also ensures the delivery of ENERGY STAR qualified desktops, notebooks, servers, and monitors. In addition to CTS and BPA, EPA promotes green IT acquisition across the Agency through green purchasing training, in which contracting officers take part annually.

As a direct result of the policy, training, and promotional initiatives that EPA has undertaken, the Agency exceeded the 95 percent acquisition rate for EPEAT-registered electronic products in FY 2008 and FY 2009. In addition, all computers and imaging equipment deployed under CTS are set to duplex by default. The Agency also met the 100 percent environmentally sound disposition rate of electronic products in FY 2008 and FY 2009. In addition, EPA achieved a 100 percent power management enabling rate on all eligible Agency computers and monitors currently in its asset management program.

Working with OARM, the Office of Environmental Information (OEI), and Agency facilities, EPA established a separate metering capability for its primary Tier III data center. To better understand energy utilization in this facility, the Agency participated in a pilot U.S. Department of Energy (DOE) study assessing energy in data center buildings and implemented many of the findings to increase power efficiency across hot and cold aisles and individual racks and servers. EPA also has identified opportunities for consolidating computing services and already has begun consolidation across its facilities. The Agency currently uses a multiprong approach to achieve efficiencies in computing across the enterprise system: identify and negotiate software licensing, increase virtualization, establish four primary data centers, and migrate primary EPA applications to those locations.



II. GOAL PERFORMANCE REVIEW

GOAL 1: SCOPE 1 & 2 GREENHOUSE GAS EMISSIONS REDUCTION

A. Goal Description

In FY 2008, EPA emitted 140,911 MTCO₂e from its facilities and from its fleet. Approximately 96 percent of these emissions (134,838 MTCO₂e) were related to building energy and operations; 4 percent (6,073 MTCO₂e) were related to fleet emissions, as shown in Table 2-3.

Table 2-3: EPA’s Scope 1 and 2 GHG Emissions Inventory

EPA’s Scope 1 Emissions	Estimated FY 2008 Baseline (MTCO ₂ e)
Stationary fuel (e.g., natural gas, fuel oil, propane, kerosene) combustion at reporting facilities	21,762
Fugitive emissions in reporting facilities from refrigerant leakage in air-conditioning equipment	6,591
Direct emissions from all Agencywide fuel consumption in EPA’s fleet (e.g., passenger cars, minivans, trucks) and tactical vehicles (e.g., trailers, generators, boats)	5,566
Fugitive emissions in reporting facilities from fire-suppression equipment	57
Fugitive emissions from EPA’s fleet and tactical vehicles (e.g., refrigerant leakage from air-conditioning equipment)	507
Process emissions from laboratory fume hood testing	302
Process emissions from National Vehicle Fuel Emissions Laboratory vehicle and engine testing	175
Process emissions from furnace testing at the High Bay laboratory in RTP, North Carolina	2,818
Process emissions from RTP incinerator/waste-handling facility’s stack	49
Total Scope 1 Emissions	37,827
EPA’s Scope 2 Emissions	
Purchased electricity, steam, hot water, and chilled water in reporting facilities	103,084
Total Scope 2 Emissions	103,084
Total EPA Scope 1 and Scope 2 Emissions	
140,911	
<i>Note:</i> This table represents the Scope 1 and 2 GHG emissions data that EPA reported to CEQ and OMB in January 2010 to meet E.O. 13514 requirements. CEQ’s GHG accounting memorandum, issued March 30, 2010, instructs agencies to include emissions associated with T&D losses from purchased heating and cooling as Scope 2 GHG emissions. EPA will adjust previously reported emissions data to account for this change (approximately 7,317 MTCO ₂ e) and any other changes contained in final E.O. 13514 Section 9 Guidance in the comprehensive FY 2008 and FY 2010 inventories that it reports to CEQ and OMB in January 2011.	

EPA committed to reduce its GHG emissions from Scope 1 and 2 sources by 25 percent by FY 2020 compared with a FY 2008 baseline. To reach this aggressive target, the Agency will reduce its facility energy intensity by 3 percent annually. Mechanical system upgrades, infrastructure replacement projects, energy assessments, and re-commissioning will enable the Agency to achieve this goal. In addition, EPA will continue to purchase green power and RECs equivalent to 100 percent of its conventional electricity use for the foreseeable future.



The Agency will pursue onsite renewable energy where feasible and will reduce its fleet fuel consumption by optimizing the fleet size, increasing the use of low-emission vehicles, and reducing petroleum fuel use by 45 percent from FY 2005 levels by FY 2020.

B. Agency Lead for Goal

OARM has overall Agency responsibility for facilities, utilities, and GHG reductions. The office within OARM with lead responsibility is OA, and under OA, the lead division is FMSD.

C. Implementation Methods

1. Reduce Facility Energy Intensity

Because energy use in EPA facilities contributes, by far, the largest share of the Agency's Scope 1 and 2 GHG emissions, energy conservation in facilities is the primary method to meet FY 2020 Scope 1 and 2 GHG reduction goals. To reach the 25 percent GHG reduction goal by FY 2020, EPA has committed to reducing its facility energy intensity by 3 percent annually.

EPA will use the current Energy Conservation Plan to reach this goal, incorporating the following strategies:

- **New Building Design:** EPA will design and construct new facilities to be much more energy efficient than the buildings they replace;
- **Mandatory Commissioning:** Since FY 2003, EPA has required mandatory commissioning on all projects that include laboratory mechanical systems;
- **Infrastructure Replacement Projects and Mechanical System Upgrades:** EPA is pursuing major mechanical system replacement projects as well as operating efficiency projects at all of its facilities;
- **GSHP Systems:** GSHP systems help the Agency meet EISA fossil fuel use reduction strategies;
- **Energy Assessments and Re-Commissioning:** EPA conducts energy assessments, often at high-energy-intensity and large laboratories, and then conducts re-commissioning at each EPA facility every 4 years as required under EISA;
- **Improved O&M:** EPA will focus on improving O&M to enhance energy performance;
- **Energy Forecasting Process:** EPA uses an energy forecasting process to track, schedule, and prioritize energy conservation projects; maintain cost and energy savings estimates; and predict its near- and long-term energy performance;
- **Advanced Metering Implementation Strategy:** EPA is installing advanced meters for utilities where they are cost effective, according to the Agency's advanced metering implementation strategy; and
- **Training and Education:** The Agency provides several venues for energy-efficiency training and education.



2. Install and Use Renewable Electricity

In FY 2009, EPA purchased sufficient green power to offset 100 percent of Agencywide electricity use with delivered green power and RECs, and has signed contracts to ensure that the Agency purchases additional green power to offset 100 percent of its electricity use through September 2010. EPA intends to continue purchasing green power to offset 100 percent of its energy use for the foreseeable future and has made substantial REC purchases for FY 2011.

In September 2009, the Agency completed a nationwide survey of potential renewable energy projects at each of its laboratories. The study evaluated solar, wind, and GSHP projects and concluded that, at full-scale implementation, EPA potentially could generate more than 79 BBtu of renewable energy, representing 5.5 percent of FY 2003 Agencywide energy consumption. These projects would enable EPA to reduce its FY 2008 Scope 1 and 2 GHG emissions by 16,800 MTCO₂e, which is approximately 12 percent of the Agency's FY 2008 total Scope 1 and 2 GHG emissions.

EPA's national onsite renewable energy feasibility study confirmed that GSHP systems are the most economical renewable technology to reduce energy and fossil fuel use. GSHP systems, when combined with other measures, such as VAV ventilation systems for laboratories and low-velocity fume hoods, can reduce heating and cooling related energy consumption by 40 to 50 percent. EPA currently is pursuing GSHP projects at three facilities.

EPA also will pursue smaller scale onsite renewable generation projects. In April 2010, the Agency completed installation of a 50 kilowatt (kW) photovoltaic system on the roof of its New Main facility in RTP, North Carolina, and a 100 kW system on the roof of the RTP Child Care facility. EPA will undertake larger onsite renewable energy projects as funding becomes available.

As required under EISA, EPA plans to implement solar hot water heating for major renovations and new construction of laboratories, where feasible and cost-effective. The Agency recently completed a solar hot water heating project at the ORD laboratory in Athens, Georgia. In new facilities or major renovations, EPA will incorporate cost-effective solar hot water heating to supply at least 30 percent of the buildings' hot water demand. The Agency also will use the GreenCheck process to ensure that all new buildings and major renovations meet the EISA Section 523 requirement to meet 30 percent of EPA's domestic (i.e., restrooms and kitchens) hot water demand with solar hot water heaters. GreenCheck ensures that EPA's major projects comply with all energy and environmental goals and regulations. More information about the GreenCheck process is included in the discussion of Goal 4: High-Performance Sustainable Design/Green Buildings.

3. Reduce Petroleum Use in Fleet Vehicles

E.O. 13514 requires agencies to reduce petroleum consumption by 30 percent by FY 2020, compared with a FY 2005 baseline. EPA has made significant progress toward meeting this goal and already has exceeded the 20 percent reduction mandated by E.O. 13423. In FY 2009, EPA achieved a 23 percent reduction in petroleum consumption



from the baseline, one of the largest percentage reductions in the government. The Agency fully expects to exceed the 30 percent petroleum reduction requirement several years before FY 2020 through increased fleet efficiency.

EPA will increase fleet efficiency by properly using fleet resources. For example, the Agency will continue to encourage consolidating multiple vehicle trips into one vehicle trip, thereby reducing vehicle miles traveled and gasoline consumed. In addition, ride-sharing, teleconferencing, and videoconferencing will be promoted as alternatives to in-person meetings that require the use of fuel for personnel to travel between offices. This will be accomplished by educating the fleet staff via site visits, policy memoranda, newsletters, and other communications. EPA also will continue to “right-size” its vehicle inventory to ensure lean and efficient use of resources.

Fleet efficiency also can be increased through proper maintenance and operation. Ensuring that vehicles undergo regular, preventive maintenance programs can optimize fuel efficiency. Attention to details such as maintaining proper tire pressure also can increase miles per gallon (MPG). EPA will review maintenance procedures during site visits to ensure an appropriate protocol is implemented. Smart operation of motor vehicles also can reduce fuel consumption; EPA will encourage such driving practices as accelerating slowly, avoiding engine idling for long periods, and carefully planning trips.

4. Increase Use of Alternative Fuels in Fleet AFVs

Alternative fuels provide an opportunity for EPA to significantly reduce petroleum consumption while promoting America’s energy security. Under E.O. 13423, the Agency is required to increase alternative fuel use to 115,655 gasoline gallon equivalents (GGE) by FY 2015. Despite the lack of infrastructure, EPA fully expects to meet this goal through coordinated action with all Regions, Offices, and Programs within EPA, and as a result, the Agency plans to continue to increase alternative fuel consumption by 10 percent each year even after the requirement’s endpoint of FY 2015.

By continuing on this accelerated track, the Agency would total 186,263 GGEs of alternative fuel consumption by FY 2020. Based on the reduction strategies detailed above, EPA’s total petroleum consumption in FY 2020 will be 247,861 GGEs. Alternative fuel, therefore, would constitute approximately 43 percent of the Agency’s total fuel consumption or 33.5 percent more than FY 2008’s 9.5 percent alternative fuel use. This means that an additional 33.5 percent of petroleum consumption will be offset by alternative fuel use by FY 2020.

EPA will implement the proposed AFCP. The AFCP will include site visits to Regional fleets to review fleet operational procedures, identify best practices, and assist fleet managers in meeting alternative fuel increase targets. Site visits will include formal and informal discussions on how to best increase alternative fuel use while decreasing petroleum and vehicle miles traveled. The AFCP will include an educational component and a “Rules and Tools” library to ensure that all fleet managers are aware of the array of Federal fleet requirements. EPA believes that this program will push the Agency onto a compliant track and projects that E85 will displace an additional 33.5 percent of the Agency’s petroleum consumption by FY 2020.



EPA proposes an ambitious implementation plan to achieve GHG and petroleum reductions. The framework for this plan will be incorporated into the proposed AFCP, in which EPA HQ staff would conduct Regional fleet site visits. This high-level implementation plan allows review and realignment every 2 years, based on changing missions, circumstances, fleet advancements, obstacles, and other factors. EPA will continue to promote responsible environmental stewardship through sustainable fleet management.

5. Optimize Use of Vehicles and Right-Size Fleet

EPA continually right-sizes its fleet to ensure responsible use of acquisition funding and to lower fuel consumption. Because the Agency's fleet is decentralized—each Region or Program Office operates its own independent budget—it is more difficult to govern and standardize operations. However, the Agency has engaged fleet staff responsible for vehicle management (Regional Fleet Managers) in various ways to make EPA's overall fleet leaner. The Agency Fleet Manager has conducted several ad hoc site visits to fleet locations to discuss fleet size and fuel consumption. The success of these visits led to development of the AFCP, a comprehensive and coordinated fleet review.

The AFCP will focus on more than just alternative fuel consumption, as the name might imply; it also will include site visits to Regional fleets to review fleet size and operational procedures, identify best practices and deficiencies, and help fleet managers meet fuel consumption targets. Site visits will include formal discussions on how to right-size the fleet, increase alternative fuel usage, and decrease petroleum use and vehicle miles traveled.

As part of the AFCP, EPA applies small-scale vehicle allocation methodologies to the Regional fleets so that they can attain a maximum-efficiency fleet size. In addition, the Agency reviews historical fleet data to determine utilization requirements, vehicle miles traveled, user and vehicle ratios, trips per vehicle, and vehicle downtime.

The Agency expects that the AFCP will help to optimize its fleet size by issuing recommendations for actions on underutilized and overutilized vehicles. The Program also will assist the Agency in meeting the fuel consumption requirements of E.O. 13423 and E.O. 13514.

6. Increase Use of Low Emission and High Fuel Economy Vehicles

E.O. 13514 reiterates the goal of EISA Section 141, which requires Federal fleets to acquire only "low GHG-emitting vehicles." Although OMB guidance has not been finalized, preliminary drafts suggest that vehicles that a score of 7 or higher (6 or higher for trucks) on EPA's Green Vehicle Guide (www.epa.gov/greenvehicles) are considered "low GHG-emitting vehicles."

The Agency has complied with this requirement by informing Regional Fleet Managers of the pending requirement and offering the tools and resources for use prior to making motor vehicle acquisition decisions. EPA also tracks the GHG score of new acquisitions in the Agency's fleet database, the AST. EPA will continue to educate and encourage Regional Fleet Managers to acquire low GHG-emitting vehicles to meet both petroleum



and GHG reduction goals. Moving forward, the Agency intends to focus on continually increasing the acquisition rates of three types of motor vehicles: fuel-efficient non-hybrids, hybrid electric vehicles (HEV), and PHEVs.

Next-generation vehicle technology will play a critical role in reducing mobile emissions. Although HEVs have been commercially available for several years, the additional acquisition costs (compared with the cost of similar vehicles without hybrid battery systems) have prevented EPA from acquiring large numbers of them. As battery production becomes more efficient, the cost of HEVs will decrease, and the Agency will continually increase its inventory through FY 2020.

D. Agency Status

By June 2010, EPA plans to complete energy assessments and to have re-commissioning efforts well under way or complete at the following facilities:

- New Main laboratory complex in RTP, North Carolina (portion of entire facility);
- AWBERC in Cincinnati, Ohio (portion of entire facility);
- Atlantic Ecology Division Laboratory, Narragansett, Rhode Island;
- Kansas City Science and Technology Center, Kansas City, Kansas;
- ORD Laboratory, Athens, Georgia;
- Gulf Ecology Division Laboratory, Gulf Breeze, Florida;
- National Vehicle and Fuel Emissions Laboratory, Ann Arbor, Michigan; and
- National Air and Radiation Environmental Laboratory, Montgomery, Alabama.

During FY 2010, EPA also plans to further investigate the potential for installing onsite renewable energy systems starting in FY 2011, based on cost effectiveness, to reduce its demand for conventional electricity and fossil fuel combustion.

Finally, by June 2010, EPA will complete two AFCP site assessments.

GOAL 2: SCOPE 3 GREENHOUSE GAS REDUCTION

A. Goal Description

EPA has submitted an estimate of the Scope 3 GHG emissions as well as a percentage target for reducing absolute emissions by FY 2020 compared with an FY 2008 baseline. The Agency used the best data available, acknowledging that over time, the quality of the Scope 3 inventory will improve. The required classes of Scope 3 GHG emissions and associated reduction targets will cover the following emission sources:

- Federal employee business travel–air transportation;
- Federal employee business travel–ground transportation;
- Federal employee travel–commuting;
- Contracted solid waste disposal;
- Contracted wastewater treatment; and
- T&D losses from purchased electricity.

Based on the known Scope 3 emissions, the Agency plans to reduce the required sources of Scope 3 GHG emissions by 8.0 percent by FY 2020 (see Table 2-4).



Table 2-4: EPA’s FY 2008 Scope 3 GHG Emissions and Target Reductions by FY 2020

Source of Emissions	FY 2008 Emissions (MTCO ₂ e)	Target Percentage Reduction by FY 2020	FY 2020 Emission Reductions (MTCO ₂ e)
Sources of GHG Emissions Required for Scope 3 Target Development			
T&D Losses from Purchased Electricity	5,390	20%	1,078
Employee Business Travel–Air	16,377	11%	1,801
Employee Business Travel–Ground	3,101	10%	310
Employee Commuting	38,173	5%	1,909
Contracted Waste Disposal	1,242	5%	62
Wastewater Transport and Treatment	154	5%	8
Total	64,437	8.0%	5,168
<p><i>Notes:</i> Emissions data presented in this table represent EPA’s best estimates as of April 28, 2010, and are subject to additional refinement. In accordance with CEQ’s GHG accounting memorandum, issued March 30, 2010, the Agency revised its existing Scope 3 GHG emissions estimate by removing emissions associated with T&D losses from purchased heating and cooling. When EPA submits its comprehensive FY 2008 and FY 2010 inventories to CEQ and OMB in January 2011, they will include these emissions (which represent approximately 7,317 MTCO₂e) as sources of Scope 2 GHG emissions and will account for any other changes contained in final E.O. 13514 Section 9 Guidance. “Other Miscellaneous Known Emissions” include fugitive emissions from refrigerant/air-conditioning equipment leakage and from fire-suppression equipment in non-reporting, leased facilities, as well as mobile emissions from EPA-chartered aircraft. FEMP and CEQ have not yet promulgated Federal guidance for quantifying Scope 3 GHG emissions from supply-chain, contracted activities, and agencies’ grants or programs; emissions associated with these categories could represent a significant portion of EPA’s Scope 3 GHG emissions inventory (5 to 10 times greater than currently known Scope 3 emissions).</p>			

B. Agency Lead for the Goal

Scope 3 GHG inventory and reduction work will be dispersed throughout EPA; will require significant cross-Agency coordination, planning, and implementation; and will be a multi-year effort.

OARM has overall Agency responsibility for facilities, utilities, and GHG emissions reductions.

- The office within OARM with lead responsibility is OA, and under OA, the lead division is FMSD; and
- EPA’s OAM is responsible for acquisition and will lead efforts to develop supply-chain Scope 3 GHG emissions inventory data and implement long-range supply-chain emissions reduction strategies.

OCFO has overall Agency responsibility for employee travel.

Overall Agency responsibility for programmatic Scope 3 emissions is still to be determined; this will be an Agencywide effort coordinated under the SSO within OARM.



C. Implementation Methods

1. Federal Employee Travel

Reduce Federal Employee Business Travel—Air and Ground

Emissions resulting from EPA employee airline travel are significant. To develop the Scope 3 GHG baseline and set its FY 2020 reduction target for employee air travel, EPA used GSA's Travel Management Tool.

EPA developed an order-of-magnitude estimate of the emissions associated with the ground portion of employee business travel (e.g., rental cars, personally owned vehicles, taxi, rail, bus). To develop this estimate, the Agency compiled a bottom-up inventory using a small sample of individual travel vouchers (with personally identifiable information [PII] redacted) and extrapolated these results to account for ground travel on an Agencywide basis. EPA will use its own financial information system to develop more accurate ground travel emissions data for FY 2011 reporting.

Since FY 2009, the EPA GTWG has been working to develop ways to reduce Agency travel, minimize travel spending, and reduce GHG emissions. Currently, the GTWG is developing a plan and investment options to make videoconferencing equipment accessible to all appropriate EPA locations. The Agency envisions parallel efforts to facilitate and educate employees on this mode of communication, reduce employees' business travel needs, and reduce EPA travel expenditures in FY 2011.

To reduce its emissions from employee business travel, EPA will pursue the following strategies:

- Increase education on alternatives to business travel;
- Expand information on existing videoconferencing facilities, install new videoconferencing facilities, and educate EPA personnel about the Agency's videoconferencing capabilities; and
- Encourage webinars and conference calls as an alternative to traveling.

To "green" meetings and conferences, EPA will:

- Work to create a dedicated and consolidated meetings/events/planning service group within EPA that has green travel and meeting expertise;
- Encourage the use of more efficient modes of transportation whenever possible (e.g., trains, buses, or cars) for short distance travel (e.g., smarter travel);
- Encourage selection of meeting and conference locations that allow for the selection of direct airline flights, and with airports that are accessible by public transit; and
- Incorporate more green travel requirements into Agency contracting activities.

Employee Commuting

EPA has more than 17,000 employees and approximately 9,000 contractors working at locations across the country, most of whom regularly commute to work. Whether employees drive personally owned vehicles, carpool, or rely on public transportation, the



Agency understands that the collective annual emissions associated with employee commuting represent a significant component of the Scope 3 emissions.

EPA plans to take a phased approach to improve the precision of its Scope 3 emissions employee commuting estimate over time. In FY 2010, EPA used the CEQ's Scope 3 Target Tool to estimate GHG emissions associated with employee commuting to set a preliminary percentage reduction target to meet by FY 2020.

To supplement existing employee commuting data from the HQ Transit Subsidy Program, EPA conducted an onsite employee commuting survey at seven locations throughout HQ in April 2010 to solicit commuting information from employees as they arrived at work. The Agency will combine the results of the onsite survey with existing data from HQ's transit subsidy database to obtain a more complete estimate for GHG emissions associated with HQ employees' commutes. Using this estimate and data from other Programs and Regions, EPA can extrapolate an estimate for commuting-related GHG emissions on an Agencywide basis.

EPA plans to establish a formal, systematic framework for annual collection of Agencywide employee commuting data (while protecting PII). This new framework would enable EPA to capture more comprehensive information about its employees' commuting patterns so that year-to-year changes would be reflected in the aggregate GHG emissions data. EPA plans to update the annual enrollment form for HQ's Transit Subsidy Program to collect more targeted commuting information and to institute a broader annual online survey to collect commuting data for employees who are not yet enrolled in the program.

The Agency also will consider improving its existing programs for reducing emissions associated with employee commuting, including providing education, training, and incentives for biking, carpooling, and taking public transportation, and encouraging compressed work-week/flexi-place scheduling. Finally, EPA will explore changing its telecommuting policies as well as strongly promote leasing and building on sites that have access to a variety of transportation options (e.g., active transportation, public transportation, and carpooling).

2. Contracted Waste Disposal

EPA currently collects accurate waste diversion and disposal data from facilities that represent 46 percent of the Agency's total square footage. The Agency will work with GSA and its O&M contractors to expand the number of facilities reporting complete waste metrics, with a goal of having complete, regular, and consistent data collection and reporting for all major EPA facilities. To meet the January 2011 inventory reporting requirement, EPA will estimate the total mass of waste produced Agencywide and use the CEQ Reporting Portal Tool to quantify the resulting GHG emissions.

EPA estimates that a 51 percent waste diversion rate was achieved at its facilities in FY 2009. Moving forward, the Agency plans to reduce resource use and encourage waste diversion at all facilities.

3. T&D Losses from Purchased Electricity



To reduce its Scope 3 GHG emissions associated with T&D losses from purchased electricity, the Agency must focus on reducing its site consumption of purchased electricity. Strategies that EPA will pursue include mechanical upgrades, re-commissioning, infrastructure replacement, and increased O&M and preventive maintenance, as described in the Goal 1 and Goal 4 sections of the SSPP.

D. Agency Status

In early FY 2010, EPA began to quantify several components of its Scope 3 GHG emissions. Quantifying and addressing other components of Scope 3 GHG emissions will require additional time and research. During the first half of Calendar Year (CY) 2010, EPA used the following processes to develop its initial estimates of several classes of Scope 3 GHG emissions:

- **Employee Commuting:** In April 2010, EPA conducted an onsite commuter survey at its HQ Offices to better understand the commuting habits of its employees. Along with existing commuting data from EPA's Regional and Program Offices, the Agency will estimate the commuting footprint for the entire Agency and determine ways to reduce it;
- **Employee Business Travel (Ground Portion):** Data on the ground portion of business travel is more difficult to collect. Between February and May 2010, EPA reviewed a sample of individual employee travel vouchers to estimate the Agency's GHG emissions associated with taxis, buses, rental cars, rail, and personally owned vehicles during business trips; and
- **GSA-Owned and GSA-Leased Facilities:** EPA began FY 2010 with a good Scope 3 GHG emissions inventory in this area; Agency data covered 86 percent of these facilities. EPA will continue to improve the energy, water, and waste data it receives from GSA-provided facilities.

GOAL 3: DEVELOP AND MAINTAIN AGENCY COMPREHENSIVE GHG INVENTORY

A. Goal Description

EPA will continue to evaluate the quality of its Scope 1 and Scope 2 GHG emissions. Specifically, the Agency will improve the data quality in the fleet fuel consumption area and evaluate the costs and benefits of using more precise methodologies for accounting for fugitive emissions from facilities-related refrigerants. EPA also will confirm the relative size and quality of data in some of the smaller emissions classes to ensure its estimates are accurate.

B. Agency Lead for Goal

Refer to leads for Goal 1 and 2.

C. Implementation Methods

EPA will continue to develop and refine the Scope 1 and 2 GHG emissions inventory by using improved data collection methods and estimation methodologies and will complete its initial Scope 3 GHG emissions inventory as Federal guidance evolves. In an effort to



further expand the Agency's overall GHG emissions inventory, in early FY 2010, EPA developed estimates of the following Scope 1 and 2 GHG emissions:

- Fugitive emissions associated with facility fire-suppression equipment and mobile air conditioning; and
- Process emissions related to laboratory fume hood performance and safety testing, mission support research on vehicle engines and furnaces, and onsite waste incineration.

EPA plans to quantify as many additional Scope 3 GHG emissions categories as possible.

In addition, EPA plans to refine the precision of its inventory by improving data collection methods and estimation methodologies. For example, the Agency currently is estimating Scope 1 fugitive emissions associated with facility air-conditioning and refrigeration equipment based on a default emissions factor provided by the Climate Leaders Program. To further refine these estimates, EPA will investigate the feasibility of collecting actual data related to the equipment type and the refrigerant charge quantities.

As the Agency improves data collection methods and refines its calculation and estimation methodologies, EPA will update its IMP accordingly to ensure that subsequent inventories properly account for these improvements. In addition, the Agency will revise previous inventories according to EPA's documented process for making revisions to past years' inventories.

D. Agency Status

EPA has a solid understanding of its Scope 1 and 2 GHG emissions and has made a strong start toward completing a comprehensive Scope 3 GHG emissions inventory. However, significant work remains to refine some of the current Scope 3 GHG emissions estimates and to develop initial estimates for other Scope 3 GHG emissions.

Early in FY 2010, EPA accounted for the sources of Scope 3 GHG emissions, along with Scope 1 and 2 GHG emissions.

EPA will adjust its work on Scope 3 GHG emissions inventory reporting as additional guidance and inventory development timetables become available.

GOAL 4: HIGH-PERFORMANCE SUSTAINABLE DESIGN/GREEN BUILDINGS

A. Goal Description

EPA is committed to achieving the following high-performance sustainable design/green building goals:

- Beginning in FY 2020, all of the Agency's new Federal buildings will be designed to achieve zero-net energy by FY 2030;
- All new construction, major renovation, or repair and alteration of EPA buildings will comply with the Guiding Principles;



- At least 15 percent of the Agency’s existing buildings and building leases will meet the Guiding Principles by FY 2015 (with a 5,000 GSF threshold);
- EPA will demonstrate annual progress toward 100 percent conformance with the Guiding Principles for its entire building inventory;
- EPA facilities will demonstrate the use of cost-effective, innovative building strategies to minimize energy, water, and materials consumption;
- EPA will manage existing building systems to reduce energy, water, and materials consumption in a manner that achieves a net reduction in Agency-deferred maintenance costs;
- EPA will strive to optimize performance of the Agency’s real property portfolio, examining opportunities to decrease the Agency’s environmental impact through consolidation, reuse, and disposal of existing assets prior to adding new assets; and
- EPA will ensure use of best practices and technology in rehabilitating historic Federal properties.

B. Agency Lead for Goal

OARM has overall Agency responsibility for facilities and utilities. The office within OARM with lead responsibility is the OA; under OA, the lead division is FMSSD.

C. Implementation Methods

Although the Agency occupies approximately 11 million square feet of space, it has a small FRPP (i.e., EPA-owned or EPA direct leased facility inventory), which consists of 4 million square feet of laboratories. GSA provides the remaining 7 million square feet of laboratory, office, and support space, either in GSA-owned facilities or in facilities leased by GSA from private owners.

EPA has developed a variety of strategies and tools to ensure high-performance sustainable buildings throughout its FRPP and GSA-provided inventory. The Agency updates these items regularly to incorporate new requirements, best practices, and lessons learned. EPA also incorporates the most recent Guiding Principles into all of its sustainable building tools, as demonstrated below:

- **Sustainable Building Implementation Plan:** Updated May 2010;
- **Strategy for Meeting the Guiding Principles in 15 Percent of Existing Buildings by FY 2015:** Updated December 2009;
- **A/E Guidelines:** Updated in December 2009 and used for all new construction and major renovation projects at EPA-owned facilities;
- **Mandatory Commissioning:** Mandatory commissioning of the mechanical, electrical, and plumbing systems components of construction projects that affect energy efficiency and ventilation performance;
- **Green A/Es:** EPA hires only A/E firms that have LEED-accredited professionals and energy conservation, green building, and commissioning experience;



- **BPLP:** The Agency maintains a compendium of proven environmental performance-related lease provisions and new lease language covering lessons learned to augment GSA's standard Solicitation for Offer (SFO);
- **BMPG:** In January 2010, EPA developed building operating and management plan guidelines to be implemented in both EPA-owned and EPA-leased facilities;
- **GreenCheck:** Ensures that all EPA green building policies, the Guiding Principles, as well as other legal and E.O. high-performance building requirements are met in each construction project or new lease acquisition; and
- **Sustainable Building Assessments:** In FY 2009, EPA began conducting a series of sustainability assessments to evaluate each facility's progress toward meeting the Guiding Principles.

The Agency uses these documents and strategies as a framework for ensuring environmental compliance, meeting the Guiding Principles, incorporating green building best practices, and meeting the other high-performance, sustainable building goals in a comprehensive, cost-effective manner. EPA updates these documents regularly based on lessons learned, refinements to EPA's Green Building Policy, and new E.O. and legislative requirements. Employees are educated on how to use these documents through the annual Agency Energy and Facilities Workshop, the Laboratories for the 21st Century Conference, and other meetings. EPA also provides green building training and education for HQ and field staff through electronic media and conference calls.

1. Beginning in FY 2020, Design All New Federal Buildings to Achieve Zero-Net Energy by FY 2030

EPA interprets net-zero energy to encompass the following hierarchy: first, focus on efficiency technologies that reduce energy use as much as possible; second, examine the potential for and the cost-effectiveness of onsite energy generation to offset natural gas (e.g., GSHP) or provide electricity; and third, offset remaining electricity use with renewable energy purchases, if possible, through long-term green power or REC purchases.

2. Ensure All New Construction, Major Renovation, or Repair and Alteration of Federal Buildings Complies with the Guiding Principles for Federal Leadership in High-Performance and Sustainable Buildings (Guiding Principles)

The Agency will take a similar approach to all new construction or major renovation projects involving FRPP buildings. As noted, EPA has updated the A/E Guidelines to include all requirements under the new construction Guiding Principles. The A/E firms involved with any EPA construction or major renovation projects receive and must adhere to these guidelines. EPA's GreenCheck process is the oversight mechanism used to ensure the Guiding Principle requirements are incorporated into all projects.

3. Ensure at Least 15 Percent of the Agency's Existing Buildings and Building Leases Meet Guiding Principles by FY 2015 [5,000 GSF threshold for existing buildings and building leases]

As of December 31, 2009, four of EPA's facilities, representing 8.2 percent of EPA's projected FY 2015 FRPP building inventory (by number of buildings), meet the Guiding



Principles (see Table 2-5). These facilities met the December 1, 2008, version of the Guiding Principles by registering with a multi-attribute green building standard prior to October 1, 2008, and by achieving third-party certification to the standard.

Table 2-5: Existing EPA FRPP Facilities Meeting the Guiding Principles

Facility	Region	Square Feet	Certification		
			Version	Level	Date
RTP, NC–National Computer Center	4	100,922	2.0	Silver	Jan 2005
RTP, NC–Childcare	4	24,225	2.1	Silver	Mar 2008
Cincinnati, OH–Annex 2	5	42,400	2.1/2.2	Gold	Dec 2008
Gulf Breeze, FL–Building 67	4	9,048	2.2	Silver	Apr 2009
Total		176,595			

EPA expects the number of facilities meeting the Guiding Principles to remain steady in FY 2010 and FY 2011 as sustainability assessments are completed and as Guiding Principles implementation continues. The Agency developed a year-by-year conformance schedule that was reported in the Agency’s January 7, 2010, OMB Environmental Stewardship Scorecard.

In January 2010, the Agency completed the first version of the BMPG, a tool to help facility managers incorporate the Guiding Principles into their day-to-day operations. EPA has targeted several facilities, based on their ability to meet the energy performance and water conservation principles, to provide technical assistance to meet the remaining principles. In 2010 and 2011, the Agency will focus on three FRPP facilities to begin comprehensive implementation of sustainable O&M practices.

4. Demonstrate Annual Progress Toward 100-Percent Conformance with the Guiding Principles for Entire Building Inventory

The goal of the BMPG is to improve and standardize green facility O&M practices at all EPA-owned facilities. When existing facilities are able to meet both the energy and water conservation Guiding Principles, as well as the remaining Guiding Principles, EPA will quickly increase the share and number of facilities in compliance with all the Guiding Principles.

5. Demonstrate Use of Cost-Effective, Innovative Building Strategies to Minimize Energy, Water and Materials Consumption

EPA will use lifecycle cost analyses to determine the most cost-effective strategies for ensuring that energy-efficient systems, water-saving technologies, and other resource-conserving measures are incorporated in all of its new facilities. The Agency will review all projects and suggested upgrades to determine initial capital cost, amortization, GHG emissions impacts, and payback period/ROI. EPA also will work with GSA to use the design competitions and best value-based lease award process to obtain the most innovative high-performance buildings.



6. Manage Existing Building Systems to reduce Energy, Water, and Materials Consumption in a Manner That Achieves a Net Reduction in Agency Deferred Maintenance Costs

The Agency has strategies in place to assess its facilities for energy conservation measures, implementation of those measures to achieve cost-effective energy savings, and provision of the O&M necessary to continue to realize solid energy performance. EPA's water efficiency efforts are covered under a Water Conservation Strategy, EISA-mandated water assessments, and facility-specific water reduction targets that are described elsewhere in the SSPP. Similarly, the Agency's sustainable acquisition policies for electronics, paper, and other items, as well as the recycling and P2 assessments discussed elsewhere in the SSPP, help to ensure purchasers are aware of the need to reduce materials consumption across the Agency.

The Agency will continue to use the quadrennial energy and water assessments and re-commissioning efforts required under EISA to identify projects that could improve facility O&M practices and slow the increase in deferred maintenance costs.

7. Optimize Performance of the Agency's Real Property Portfolio—Examine Opportunities to Decrease Environmental Impact Through Consolidation, Reuse and Disposal of Existing Assets Prior to Adding New Assets

EPA is working to maximize the performance of its real estate portfolio by scrutinizing current buildings, mission-support needs, and funding availability, and consolidating space wherever possible. Beginning in FY 2005, EPA conducted a comprehensive national rent and space analysis to evaluate space allocations for potential savings.

8. Ensure Use of Best Practices and Technology in Rehabilitation of Historic Federal Properties

Although EPA currently does not have any historic restoration projects planned for the near term, the Agency worked closely with GSA on the following two GSA-owned historic buildings—the historic John W. McCormack Post Office and Courthouse in Boston, Massachusetts, that now houses its Region 1 Office, and the Ariel Rios HQ buildings in Washington, DC—that provided a variety of lessons learned and that ensure future restoration projects will maintain historical integrity and optimum efficiency.

D. Agency Status

As of December 31, 2009, EPA was more than half way to meeting its FY 2015 goal of 15 percent of existing buildings meeting the Guiding Principles. The Agency expects to continue this trend by using the implementation methods described in this section.

In January 2010, EPA completed drafting its pilot BMPG as a tool for helping existing facilities meet the Guiding Principles. By the end of FY 2010, the Agency will initiate pilots at three locations.

In April 2010, EPA completed the move of its Region 1 Office into the historic John W. McCormack Post Office and Courthouse in Boston. The Agency expects that this renovated, historic building will serve as a model for future historic renovations and garner at least LEED-NC Silver certification. On April 12, 2010, GSA awarded a lease



to house EPA's Region 10 Office in Seattle, Washington, which recently received a LEED-EB Platinum certification.

By June 2, 2010, EPA will have completed the latest update to the Sustainable Building Implementation Plan (SBIP) and the second round of sustainable building assessments, synchronized with the mandatory EISA energy and water assessments and re-commissioning, which will be completed by June 16, 2010.

GOAL 5: REGIONAL AND LOCAL PLANNING

A. Goal Description

In FY 2008 and again in FY 2010, EPA updated its A/E Guidelines to incorporate the use of green design and planning principles such as transportation, local energy planning, and NEPA for new construction and major renovation projects. The Agency consults with state, local, and municipal officials early in the site selection process to incorporate their recommendations and feedback in an effort to support local goals and objectives. This approach also makes the site supportive of the workers it employs as well as of the surrounding community.

The Agency will continue to advance regional and local planning efforts through the following activities:

- EPA has incorporated regional transportation planning into its existing A/E Guidelines and will continue to advance these sustainable measures during the site selection process;
- EPA will align Agency policies to increase the effectiveness of local energy planning by meeting with local energy planning officials and incorporating their suggestions and feedback. The Agency will continue to coordinate with local utility providers during the design process. In addition:
 - EPA will continue to encourage municipalities to update zoning regulations to allow for the installation of onsite renewable energy and will collaborate with states and municipalities to persuade utility providers to offer a more comprehensive suite of renewable options in their energy portfolios;
- EPA has incorporated sustainable building location into its A/E Guidelines, BPLP, and SBIP and will continue to promote this feature during the site selection process;
- EPA has incorporated NEPA into its existing A/E Guidelines and will continue to incorporate this process into the review of proposed new and expanded facilities; and
- EPA will continue to promote its policy and guidance in A/E Guidelines to ensure coordination with Federal, state, tribal, and local management authorities regarding impacts on local ecosystems, watersheds, and environmental management associated with proposed new or expanded Federal facilities.



B. Agency Lead for Goal

OARM has overall Agency responsibility for facilities and their integration into local and regional planning; the office within OARM with lead responsibility is OA; and under OA, the lead division is the FMSD.

C. Implementation Methods

1. Incorporate Participation in Regional Transportation Planning (Recognition and Use of Existing Community Transportation Infrastructure) into Existing Policy and Guidance

EPA considers the availability and accessibility of existing road systems, public transportation, and other transportation networks during the planning and siting process, as well as opportunities for transit-oriented development and community connectivity to maximize access to public transportation.

The Agency takes into account Federal and local planning and economic development goals during the acquisition of new leases and the building of new facilities. During the site selection process, EPA engages local transportation planning authorities to ensure access to a community transportation infrastructure.

The Agency's A/E Guidelines promote sustainable site selection and reduction of EPA's energy footprint. During the acquisition of new leases and when siting new FRPP facilities, EPA locates areas that provide safe and efficient multimodal travel options for trips to and from employee homes and to other locations and services in an effort to reduce or eliminate the need for employees to drive. When available, the Agency mandates that a building be located within the immediate vicinity of a commuter rail, light rail, or subway station, not to exceed the ½-mile walkable distance. Alternatively, two or more public or campus bus lines usable by tenant occupants are required to be located within the immediate vicinity of the building, generally not to exceed ¼-mile walkable distance.

2. Align Agency Policies to Increase Effectiveness of Local Energy Planning

EPA coordinates with state, county, local, and municipal planning authorities to increase the effective use of local energy planning resources and considers partnerships with local utilities and energy-saving companies to assist in financing low-emissions, low-operating cost mechanical systems. EPA strongly advocates siting facilities near existing communities to reduce the natural and financial resources required for construction and maintenance of utilities requirements.

3. Incorporate Sustainable Building Location into Policy and Planning for New Federal Facilities and Leases

The Agency has made progress in ensuring that new construction and major renovation projects are LEED certified for New Construction; specifically, EPA strives to achieve LEED Gold for all major renovation and construction projects and requires at least LEED Silver. One of the major essentials of LEED is a sustainable building location, and EPA adheres to sustainable siting principles to attain such points.



As noted, the Agency also has incorporated sustainable building location into its policy by standardizing green site planning language in its A/E Guidelines.

The following additional issues are considered when determining whether the proposed development site is appropriate and compatible with its natural environment and surrounding community:

- Preserving surrounding neighborhoods and communities;
- Preserving the character of the site, to the maximum possible extent, by retaining natural features, such as ground forms, trees, and other natural vegetation;
- Using the existing site to the best advantage by locating and orienting buildings so that they are compatible with natural site features;
- Developing functional relationships between site access points, parking lots, buildings, service areas, and all other project site elements;
- Providing for orderly future expansion of facilities by considering logical expansion of buildings, parking, and support services; and
- Reviewing and assessing the impact of development with respect to any approved campus master plan and site infrastructure master plan.

EPA also encourages Smart Growth principles during the facility siting process.

4. Update Agency Policy and Guidance to Ensure That All Environmental Impact Statements and Environmental Assessments Required Under NEPA for Proposed New or Expanded Federal Facilities Identify and Analyze Impacts Associated with Energy Usage and Alternative Energy Sources

EPA amended its procedures for implementing the requirements of NEPA on September 19, 2007 (72 Federal Register [FR] 53652). In accordance with these procedures, actions involving renovations or new construction of Agency facilities are types of actions that normally require the preparation of an Environmental Assessment (EA) (see 40 Code of Federal Regulations [CFR] § 6.205(b)(3)).

In May 1998, OARM published the guidance document entitled *National Environmental Policy Act Review Procedures for EPA Facilities* and currently is revising the guidance in accordance with the Agency's revised NEPA regulations. NEPA EAs will be required for renovation and construction of facilities to identify and analyze impacts associated with energy usage and alternative energy sources. OARM anticipates publication of the revised NEPA guidance in FY 2011.

The Agency also applies NEPA regulations to all EPA facility construction projects, regardless of size. The review process takes energy, air, water quality, aesthetic, cultural, historic, health, and socioeconomic impacts into consideration through the following activities:

- Determination of the appropriate level of NEPA review for the proposed project;
- Definition of significant issues requiring further analyses through information gathering, scoping, public meetings, and public participation;



- Evaluation of project alternatives, including the proposed action and possible mitigation measures, to determine whether there are environmental impacts and if so, whether they are significant or not significant; and
- Development of documentation to assist the public and decision-makers in evaluating the proposed action and alternatives.

5. Update Agency Policy and Guidance to Ensure Coordination and (Where Appropriate) Consultation with Federal, State, Tribal, and Local Management Authorities Regarding Impacts on Local Ecosystems, Watersheds, and Environmental Management Associated with Proposed New or Expanded Federal Facilities

The Agency ensures that its facility siting process minimizes destruction, loss, and degradation of wetlands. To the extent possible, EPA considers the requirements of E.O. 11988 and E.O. 11990, which govern Federal actions related to floodplains and wetlands, respectively. When siting a facility, the Agency:

- Locates the 100-year floodplains in the area. If floodplains are located near the site, the boundaries are delineated on all surveys and site plans. New facilities are not to be located within the 100-year floodplain. In addition, to the extent possible, facilities are not sited in areas subject to flash floods;
- Avoids the long-term and short-term adverse impacts associated with the destruction of wetlands and the occupancy and modification of floodplains and wetlands, and avoids direct and indirect support of floodplain and wetlands development wherever there is a practicable alternative for new development;
- Incorporates floodplain management goals and wetland protection considerations into its planning, regulation, and decision-making;
- Carefully considers the potential impacts of any EPA action in a floodplain and the impacts of any new Agency construction on wetlands not located in a floodplain;
- Identifies, considers, and, as appropriate, implements alternative actions to avoid or mitigate adverse impacts on floodplains and wetlands;
- Provides opportunities for early public review of any plans or proposals for actions in floodplains or new construction in wetlands; and
- Ensures that construction within floodplains or wetlands complies with environmental review requirements under 10 CFR 1022 and NEPA.

All EPA construction activities that have a potential for significant impact on wetlands comply with the requirements in Section 404 of the Clean Water Act (CWA). Only after avoidance and minimization criteria are satisfied can wetlands mitigation be considered. An EA or Environmental Impact Statement (EIS) under NEPA review requirements is prepared for any wetlands construction permit application.

D. Agency Status

In FY 2009, EPA revised the GreenCheck form to include requirements of E.O. 13514; specifically, the requirements for sustainable siting and regional transportation planning for new construction and new lease facilities.



In FY 2010, EPA revised the A/E Guidelines to include sustainable siting and regional transportation planning. In addition, in FY 2009, the Agency revised its BPLP to include standard lease language on sustainable siting and regional transportation planning.

EPA will continue to advance its Smart Growth program and work with states and local communities to encourage development and use of regional and local planning principles.

GOAL 6: WATER USE EFFICIENCY AND MANAGEMENT

A. Goal Description

EPA's water use efficiency and management goals are:

- EPA will meet the E.O. 13514 goal of a 26-percent water use reduction by FY 2020, from a FY 2007 baseline;
- EPA currently is examining non-potable water use to evaluate how this applies to EPA (e.g., onsite well water used for research and irrigation, lake water used for research and equipment cooling);
- EPA will continue to install technologies to reuse water and is field testing new strategies for water reuse; and
- EPA's FMSD has adopted the EISA Section 438 Guidance issued by EPA's Office of Water (OW) on December 4, 2009, as a mandatory national standard for new projects *and* retrofit opportunities as they present themselves (e.g., repaving parking lots, replacing roofs).

B. Agency Lead for Goal

OARM has overall Agency responsibility for facilities and utilities; the office within OARM with lead responsibility is OA; and under OA, the lead division is the FMSD.

C. Implementation Methods

1. Reduce Potable Water Use Intensity by at Least 26 Percent by FY 2020

EPA completed water management plans at all reporting laboratory facilities between FY 2002 and FY 2008 and implements those plans. Under EISA requirements, the Agency is reassessing facilities every 4 years to revise existing water management plans to include new water conservation opportunities and best practices.

EPA will update its Water Conservation Strategy annually to reflect new water conservation opportunities, the status of water conservation projects underway, and new Agencywide initiatives. EPA will select the most practical and cost-effective projects each year for implementation.

2. Reduce Industrial, Landscaping, and Agricultural Water Use by at Least 20 Percent by FY 2020

EPA is evaluating its data for non-potable water use. To determine whether the Agency needs to address the 2 percent annual reduction requirement, EPA is conducting a facility-by-facility evaluation. This effort will determine whether any of the Agency's current water uses should be classified as industrial, landscaping, or agricultural.



EPA's initial assessment indicates that some facilities have non-potable uses that are subject to this requirement. Therefore, the Agency will establish a metering or measurement plan to calculate a FY 2010 baseline of the non-potable water uses to be reported in FY 2011. The plan will rely on metered data where they are available and on estimating methods where meters are not present. Over the longer term, EPA will install meters where feasible to improve the accuracy of estimated data. EPA will use EISA water assessments to identify project opportunities for reducing non-potable water use, revise facility water management plans, set facility-specific non-potable water reduction targets where applicable, and incorporate best management practices to reduce non-potable water use.

3. Identify and Implement Water Reuse Strategies

Key methods EPA currently applies for reusing water at its facilities, and plans to continue using in more instances, include:

- **Condensate Recovery:** EPA recovers air-handler condensate and reuses it for non-potable uses, typically for cooling tower makeup water, wherever practical. Cooling towers account for 27 percent of EPA laboratory water use and, where practical, recovered air-handler condensate can provide up to one-third of this required amount, leading to significant water savings;
- **Reverse Osmosis (RO) Rejected Water Reuse:** EPA uses RO to generate ultra-pure water for research purposes. As part of this process, a portion of the water containing dissolved minerals is discharged to the sewer. Although the discharged water is not of sufficient quality for research purposes, it sometimes can be reused in equipment such as cooling towers and for flushing lavatory fixtures;
- **RO to Improve Water Quality for Reuse:** EPA currently is designing an RO system with the National Institute of Environment Health Sciences at the RTP campus to use RO on cooling tower blowdown to improve the quality of that water and reuse it in the cooling tower. Savings are estimated at 8.7 million gallons per year; and
- **Rainwater Harvesting:** EPA is evaluating opportunities for harvesting rainwater for low-quality water needs such as irrigation and toilet flushing. EPA already does this at its Science and Technology Center in Kansas City, Kansas; Computation Science Building in Gulf Breeze, Florida; and HQ Federal Triangle complex in Washington, DC.

The Agency also tries to implement new opportunities for water reuse identified during water assessments or developed by the EMS teams at each major facility, where feasible. Lessons learned during reuse projects will be shared with facility staff using the training methods described above.

4. Achieve Objectives Established by EPA in Stormwater Guidance for Federal Facilities

EPA has incorporated the Technical Guidance on *Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of EISA*, issued December 4, 2009, into its A/E Guidelines, BPLP, and GreenCheck process and will update those documents



and processes to reflect lessons learned from new stormwater management projects. The Agency will apply the EISA Section 438 Guidance at all new facility projects and will include pervious parking lots, green roofs, rain gardens, and other site enhancements whenever these approaches can be used as retrofits on site or building renovation projects.

EPA gathers new stormwater management opportunities during sustainability assessments, including ideas developed by the EMS teams at each major facility. These ideas are shared as part of the Agency's ongoing education and training program.

D. Agency Status

In FY 2009, EPA completed water-efficiency projects that will save approximately 3.6 million gallons of water per year. The Agency also began irrigation system replacement or retrofit projects at three facilities and began studying a large-scale air-handler condensate recovery project at the RTP New Main facility.

FY 2010 priority projects in various EPA laboratories include condensate recovery, RO, high-efficiency plumbing fixture replacements, irrigation system replacements/retrofits, control of tempering water flow in boiler blowdown drains, and reduction of single-pass cooling. By September 30, 2010, EPA should complete projects that will save an estimated 5.8 million gallons of water per year.

In FY 2010, EPA will conduct a facility-by-facility evaluation to determine which of the Agency's current non-potable water uses should be classified as industrial, landscaping, or agricultural, and evaluate whether cost-effective measures are available to reduce these uses. By September 30, 2010, for non-potable water use subject to E.O. 13514 requirements, the Agency will establish a metering or measurement plan to calculate a FY 2010 baseline of non-potable water uses to be reported in FY 2011. EPA will begin implementing required projects in FY 2011.

In FY 2011, EPA will continue to focus on condensate recovery, controlling tempering water flow to boiler and steam sterilizer blowdown drains, and eliminating single-pass cooling. By September 30, 2011, the Agency expects to complete projects that will save an estimated 2.8 million gallons of water per year.

To achieve the objectives established by EPA's stormwater guidance for Federal facilities, in FY 2010, the Agency will actively seek opportunities for retrofits of existing sites.

GOAL 7: POLLUTION PREVENTION AND WASTE ELIMINATION

A. Goal Description

EPA's P2 and waste elimination goals are:

- EPA will continue to prioritize source reduction of pollutants and waste;
- The Agency plans to exceed the E.O. 13514 goal of diverting 50 percent of non-hazardous solid waste by FY 2015; its goal is to divert 55 percent by FY 2015;
- EPA plans to exceed the E.O. 13514 goal of diverting at least 50 percent of C&D materials and debris by FY 2015;



- The Agency will continue to reduce printing paper use through duplex printing requirements;
- EPA will continue to exceed the requirement to purchase printing and writing paper with 30 percent postconsumer content;
- The Agency will continue to reduce the acquisition, use, and disposal of hazardous chemicals and materials;
- EPA will divert an increasing percentage of the compostable and organic materials;
- The Agency’s facilities will continue to expand their use of integrated pest management and landscape management practices that reduce and/or eliminate the use of toxic and hazardous chemicals and materials;
- EPA will continue to expand implementation of acceptable alternative chemicals and processes;
- The Agency will reduce the use of chemicals with high global warming potential to assist in achieving its FY 2020 GHG emissions reduction targets; and
- EPA facilities will continue to report in accordance with sections 301–313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986.

B. Agency Lead for Goal

OARM has overall Agency responsibility for facilities, waste diversion, P2, and chemical management; the office within OARM with lead responsibility is OA, and under OA, the lead division for waste and pollution issue is FMSD. Also under OA, the lead division for chemical management and safety issues is SHEMD.

EPA’s Office of Solid Waste and Emergency Response (OSWER) is the Agency’s policy group for resource conservation and sustainability.

C. Implementation Methods

1. Increase Source Reduction of Pollutants and Waste

EPA makes source reduction of pollutants and waste a priority through appropriate purchasing and property management policies. The Sustainable Acquisition and the Electronic Stewardship and Data Centers sections of the SSPP provide additional information in this area. In addition, EPA encourages its facilities to consider waste prevention opportunities before recycling in its waste management hierarchy. The Agency emphasizes source reduction in technical assistance to its facilities and encourages facilities to include waste prevention activities in their waste diversion data.

EPA has been working to phase out equipment containing toxic materials, such as mercury-containing thermometers, standard fluorescent bulbs, and equipment containing ODSs, which are part of the Agency’s Scope 1 and 2 GHG emissions reduction target. EPA actively encourages its laboratories to regularly review their analytical methods to determine whether more environmentally preferable options to toxic materials are available. The Agency provides assistance to its laboratories on proper disposal of toxic materials through a newsletter and guidelines distributed to Safety, Health, and Environmental Management Program (SHEMP) managers.



The Federal green purchasing program requires agencies to minimize procurement of ODSs. EPA requires procurement officials to give preference to alternative chemicals, products, and manufacturing processes that reduce risks to human health and the environment. A comprehensive list and alternatives to ODSs can be found in the Agency's Significant New Alternatives Policy (SNAP) Program.

2. Divert at Least 50 Percent of Non-Hazardous Solid Waste by FY 2015, Excluding C&D Debris

EPA's largest non-hazardous solid waste streams within its office and laboratory facilities include scrap metal, paper, organics, corrugated cardboard, and other packaging materials (including food packaging). To reduce the GHG emissions associated with disposing of those and other waste materials, the Agency emphasizes source reduction as a priority and continually explores opportunities to recycle additional materials—at HQ, its Regional Offices, and Laboratories—through its waste reduction program and through individual facility “green teams” and EMSs.

Because the Agency already has met the 50 percent waste diversion goal, EPA's strategies to exceed E.O. 13514 requirements include:

- Conducting waste reduction and sustainability assessments;
- Providing technical assistance to facility recycling and EMS coordinators;
- Conducting education and training;
- Highlighting best practices and model programs that can be replicated;
- Targeting larger facilities with the lowest waste diversion rates;
- Incorporating recycling into new lease provisions and renovations;
- Expanding metrics capability to collect solid waste and recycling data; and
- Conducting ongoing challenge programs to provide incentives for facilities.

3. Divert at Least 50 Percent of C&D Materials and Debris by FY 2015

EPA's real property policies, program, and processes currently require 75 percent diversion for projects 20,000 square feet or larger and require facilities to submit a plan on how C&D wastes will be separated and managed. In addition, the GreenCheck checklist for projects and BPLP address C&D waste diversion. The Agency will continue to work with facilities to ensure that C&D waste diversion is addressed in all renovation projects and will expand its data collection and tracking in this area.

4. Reduce Printing Paper Use

Under EPA's new contract for computers and IT support services at HQ and at laboratory facilities, all eligible computers and printers are required to be set to duplex by default. The Agency is working to ensure that the duplex printing feature is set as the default for all eligible computers and imaging products. EPA's PC (personal computer) Configuration and Management Standard requires setting all networked and shared printers to duplex printing as the default.

EPA will continue education and outreach related to reducing paper use, including adding technical assistance resources to the intranet site, hosting a webinar, and working through the emerging HQ green teams to develop initiatives related to reducing paper use.



5. Increase Use of Uncoated Printing and Writing Paper Containing at Least 30-Percent Postconsumer Fiber

EPA's policy is to purchase 100-percent recovered paper with 50-percent postconsumer content for its HQ facilities. The Agency will continue to seek options for increasing the environmentally preferable attributes of paper (e.g., purchasing paper from mills that use wind as the primary power source and evaluating the use of recyclable coated stock) and purchasing paper with higher postconsumer content (e.g., file folders). Under a previous BPA, EPA required vendors to provide paper with 50-percent postconsumer fiber. While EPA is transitioning to a new BPA, the Agency will encourage programs and purchase card users to continue to adhere to the 50-percent postconsumer standard.

6. Reduce the Acquisition, Use, and Disposal of Hazardous Chemicals and Materials

EPA laboratories use and dispose of toxic chemicals in analyzing environmental samples, performing toxicology studies, and conducting ecological studies. To reduce the amount of toxic and hazardous chemicals and materials acquired, used, and disposed, the Agency will:

- Support chemical management work groups and committees;
- Strengthen chemical management systems;
- Adopt alternative analytical methods;
- Replace toxic analytical reagents with benign substitutes; and
- Reduce the amount of sample that enters the laboratory.

EPA has an Agency Toxic and Hazardous Chemical Management Plan and associated programs, along with a chemical management tracking database. EPA will update this plan based on the requirements of E.O. 13514 to reduce Scope 1, 2, and, ultimately Scope 3 (Agency chemical supply contractors) GHG emissions. EPA will offer environmental regulatory compliance training webinars in 2010 to laboratory facilities on EPCRA regulations, the importance of accurate chemical inventories, and offsite reporting. The Agency also uses its Safety, Health, and Environmental Management (SHEM) Audit and Evaluation Program to inquire about employees' familiarity with these regulations and inventories and to address any deficiencies in these areas.

Nearly 70 percent of EPA's laboratories have established internal chemical management committees that meet periodically to identify ways to enhance their chemical management system and to further reduce the environmental impacts associated with analytical procedures. The Agency will encourage all of its laboratories to implement such committees by the end of 2011. In addition, EPA will promote best practices for chemical management systems, communicating with individual laboratories that lack specific best practices to encourage them to adopt best practices and alternative analytical methods.

EPA will work to phase out equipment that contains toxic and hazardous chemicals. For example, the Agency will continue an ongoing effort to communicate to EPA laboratories the importance of replacing mercury-containing thermometers with non-mercury



alternatives. Since 2005, the Agency has phased out more than 1,500 mercury-containing thermometers.

7. Increase Diversion of Compostable and Organic Materials from the Waste Stream

Six EPA facilities currently have composting programs; the Agency will continue to share these model programs with other facilities, using the technical assistance avenues described under the non-hazardous solid waste diversion goal above. EPA's Potomac Yard facility in Arlington, Virginia, a high-profile HQ facility, is piloting composting food scraps in 2010. If successful, this program can be piloted in other EPA HQ facilities.

8. Implement Integrated Pest Management and Landscape Management Practices to Reduce and Eliminate the Use of Toxic and Hazardous Chemicals and Materials

EPA is committed to reducing the amount of toxic materials used to control pests and maintain facility grounds. To that end, the Agency has instructed EPA facilities to implement integrated pest management (IPM). In addition, the Agency encourages facilities to adopt green landscaping practices to reduce the amount of chemicals required to support landscaped areas. EPA's BMPG provides guidelines for implementing IPM and green landscaping practices at existing EPA facilities. EPA also works with GSA to implement IPM in leased buildings, as stated in EPA's BPLP.

9. Increase Agency Use of Acceptable Alternative Chemicals and Processes

EPA encourages its laboratories to regularly review their existing processes to determine whether there are more environmentally preferable options available. To date, Agency laboratories have implemented a variety of practices that enable them to analyze environmental samples using less solvent, acid, and other reagents. For example, many of them use microscale chemistry techniques and/or have implemented efficient extraction and digestion technologies.

10. Decrease Agency Use of Chemicals to Assist in Achieving FY 2020 GHG Reduction Targets

EPA will promote the phase-out of existing equipment using ODSs that can negatively affect the stratospheric ozone layer if released and also exhibit a high global warming potential. This equipment may include freezers, refrigerators, fire-extinguishing systems, chillers, and other components of heating, ventilation, and air-conditioning (HVAC) systems. The Agency has instructed all of its facilities to establish baselines for their Class I and Class II ODS use and to establish a written ODS Management Plan. EPA will communicate with facilities that have not yet completed these activities and instruct them to do so. Next, the Agency will review the plans and determine whether additional technical assistance is needed to assist EPA locations with phase-out efforts. The Agency also will consider adding new language within its EMS targets and metrics to effect the phase-out of ODS equipment across all laboratory facilities and recognize any impact of other ozone-depleting laboratory chemicals.

11. Report in Accordance with Sections 301–313 of the EPCRA of 1986



EPA uses its SHEM Audit and Evaluation Program to ensure that Agency facilities are complying with EPCRA sections 301–313. Under this program, EPA audits its offices and laboratories on a 3- to 5-year cycle. As part of the process, auditors examine facilities to determine whether they are meeting all of the emergency planning, emergency release notification, hazardous chemical storage reporting, and Toxic Release Inventory (TRI) reporting requirements listed under EPCRA Sections 301–313.

D. Agency Status

Because the Agency already has met the 50 percent waste diversion goal ahead of schedule, EPA’s strategies to exceed E.O. 13514 requirements in FY 2010 and FY 2011 include:

- Providing technical assistance to facility recycling and EMS coordinators;
- Highlighting best practices and model programs that can be replicated;
- Targeting larger facilities that have the lowest current waste diversion rates;
- Conducting waste reduction and sustainability assessments;
- Incorporating recycling into lease provisions;
- Expanding metrics collection capabilities; and
- Conducting ongoing challenge programs to provide incentives to facilities.

The Agency will evaluate results from a HQ composting pilot in FY 2010 to determine whether it could be applicable to other facilities in FY 2011. EPA also will continue to ensure that C&D waste diversion is addressed in all renovation projects and to expand its data collection and tracking in this area by FY 2011.

To reduce the amount of toxic and hazardous chemicals and materials acquired, used, and disposed, EPA will encourage all of its laboratories to solicit comments from its employees on internal chemical management to identify ways to enhance their chemical management systems and share best practices by FY 2011. Over the next 2 years, the Agency also will work to phase out equipment that contains toxic and hazardous chemicals, encourage IPM, reduce the amount of chemicals used for landscaping maintenance, and work with facilities on ODS management plans.

GOAL 8: SUSTAINABLE ACQUISITION

A. Goal Description

In FY 2009, EPA established the GPP as part of its Contracts Management Manual to establish, encourage, and promote a preference for products and services that are produced and performed in an environmentally responsible manner, as well as to address the distribution, maintenance, reuse, and disposal of such products and services. The Agency will continue to advance sustainable acquisition through the following goals:

- EPA will ensure 95 percent of new contract actions, including task and delivery options for products and services, are energy-efficient, water-efficient, bio-based, environmentally preferable non-ozone depleting, contain recycled content, or are non-toxic or less toxic alternatives, by incorporating these features as mandatory guidelines into the GPP. To aid this effort:



- EPA will use its new acquisition system, which will roll out during FY 2010, allowing purchasers (Contracting Officers and Contract Specialists) to check a box if the purchase is a “green” product or service. The Agency will use this new system periodically to accurately track contracts; and
- EPA will continue to update its affirmative procurement plans, policies, and programs to ensure that all Federally mandated designed products and services are included in all relevant acquisitions and will continue to update the GPP as new products and services emerge. In addition:
 - EPA will continue to promote and focus on green procurement training for Agency personnel to educate suppliers, contractors, and the general public about EPA’s preference for green products and services.

B. Agency Lead for Goal

OARM has overall Agency responsibility for acquisitions and acquisition management; the office within OARM with lead responsibility is the OAM.

C. Implementation Methods

1. Ensure 95 Percent of New Contract Actions, Including Task and Delivery Orders for Products and Services Are Energy-Efficient (ENERGY STAR Qualified or FEMP Designated), Water-Efficient, Bio-Based, Environmentally Preferable Non-Ozone Depleting, Contain Recycled Content, or Are Non-Toxic or Less Toxic Alternatives

Over the past year, EPA has advanced sustainable acquisition through guidance documented in the GPP, which contains specific clauses about the Agency’s preference for environmentally friendly products and services. The GPP provides Agencywide guidance for implementing a green procurement program for acquisition of the following items:

- EPA’s designated recovered-content products;
- U.S. Department of Agriculture’s (USDA) designated bio-based content items;
- Energy- and water-efficient products;
- Environmentally preferable products;
- Products using renewable and innovative energy technologies;
- AFV/alternative fuel;
- Non-ozone depleting substances; and
- Priority chemicals.

The Agency will ensure that products and services are energy-efficient, water-efficient, bio-based, environmentally preferable, non-ozone depleting; that they contain recycled content; and that they are non-toxic or less toxic alternatives when such products and services meet EPA’s performance requirements.

Furthermore, the Agency’s SBIP requires that whenever feasible, ENERGY STAR qualified/FEMP-designated products are specified, and that offices use USDA’s designated products and products that meet or exceed USDA’s bio-based content recommendations. EPA also continues to promote the WaterSense Program as a national



brand for water efficiency through GPP guidance and training. EPA's GreenCheck process also includes a products and materials "green checklist" to ensure products within EPA's facility projects are energy efficient and sustainable.

2. Update Agency Affirmative Procurement Plans, Policies, and Programs to Ensure That All Federally Mandated Designated Products and Services Are Included in All Relevant Acquisitions

The Agency's procurement plans incorporate a number of Federal Programs:

- Comprehensive Procurement Guidelines (CPG) for recycled content products;
- BioPreferred Program;
- ENERGY STAR and FEMP;
- Environmentally Preferable Purchasing Program (EPP);
- Alternative Fuel Vehicles/Alternative Fuels Program;
- WaterSense Program;
- Significant New Alternatives Program; and
- Priority Chemicals Program.

The CPG implemented by EPA's OSWER, promotes the purchase of products containing materials recovered from solid waste. By purchasing recycled-content products, EPA is ensuring that the materials collected in recycling programs are reused in the manufacture of new products.

The Agency also promotes the purchase of items composed, in whole or in significant part, of bio-based products, forestry materials, or renewable domestic agricultural materials. EPA follows USDA's BioPreferred Program and procures products with the highest bio-based content practicable. The Agency also purchases ENERGY STAR qualified products, including appliances, light bulbs, lighting fixtures, office equipment, electronics, and heating and cooling devices. EPA follows FEMP guidelines for purchasing the most energy-efficient products. The GPP includes guidance on incorporating ENERGY STAR qualified and FEMP-designated products into Agency procurements. EPA also incorporated the EPP Program into its GPP.

In addition, EPA looks for the WaterSense label to purchase water-efficient, high-performance products and services and will continue to do so in accordance with the GPP.

The Agency also is committed to minimizing procurement of ODSs by making sure that procurement officials give preference to alternative chemicals, products, and manufacturing processes that reduce risk to human health and the environment. EPA has put together a comprehensive list of alternatives to ODSs with the SNAP. The Agency also promotes the use of the Priority Chemicals Program by providing guidance and instructions in its GPP.

D. Agency Status

In FY 2009, EPA confirmed that 70 percent of its total contract actions were green procurements. OAM's contract tracking system (to be rolled out in third quarter FY



2010) will be used to track and ensure green procurement for 95 percent of contract actions.

The Agency's Resource Conservation and Recovery Act (RCRA) Standard Report for FY 2009 clearly indicated that the Agency is making great strides in conforming with Federal Acquisition Regulation (FAR) and E.O. 13423 for green procurement.

During FY 2010, the Agency will provide additional training on green procurement via videoconferencing for EPA contracting officers and contract specialists in the Regional Offices. In addition, the Agency recently updated the GPP to include mandates from E.O. 13514. EPA's procurement operating divisions and Regional Contracting Offices will continue to include an element in their QAPs that requires regular oversight of green procurement issues, including compliance with the GPP, collection of vendor certifications, and data integrity. In FY 2011, OAM will increase the total contract actions to be green procurements by 15 percent, thereby achieving the 95 percent green acquisition goal.

GOAL 9: ELECTRONIC STEWARDSHIP AND DATA CENTERS

A. Goal Description

In FY 2009, EPA launched a series of initiatives designed to create a foundation of policies to support electronics energy management, environmentally preferable purchasing, and sound recycling activities. The Agency will continue to advance electronic stewardship and efficient data centers through the following goals:

- EPA will use the Agency's existing PC Configuration and Management Standard to ensure use of power management and duplex printing;
- The Agency will revise EPA's PC Configuration and Management Standard to address the emergence of other relevant energy-efficient or environmentally preferred options and features on all eligible Agency electronic products;
- EPA will maintain the 100 percent power management enabling rate on all eligible computers and monitors;
- The Agency will maintain the 100 percent rate of environmentally sound disposition of Agency excess and surplus electronics;
- EPA will publish best management practices guidelines for the management of servers and data centers under its authority;
- The Agency will identify covered and non-covered facilities;
- EPA will investigate installing monitoring devices at any primary data center not already metered to develop an energy consumption baseline; and
- The Agency will create a plan to meet the energy reduction goals for its data centers that will include implementing virtualization technologies, cloud computing opportunities, and other such activities.

B. Agency Lead for Goal

Electronic stewardship is implemented by two organizations within EPA: OARM and OEI. The Office of Chemical Safety and Pollution Prevention (OCSPP) provides



guidance on best practices in electronic stewardship to OARM and OEI. OEI is responsible for managing the Agency's computer and network infrastructure, including data centers.

C. Implementation Methods

1. Establish and Implement Policy and Guidance to Ensure Use of Power Management, Duplex Printing, and Other Energy Efficient or Environmentally Preferred Options and Features on All Eligible Agency Electronic Products

The Agency has made great strides in establishing and promoting the use of key environmental features and practices on eligible electronic products. EPA's Electronic Stewardship Implementation Plan outlines how the Agency is meeting the electronic stewardship goals of E.O. 13514 and E.O. 13423.

To ensure proper use of power management, EPA has established the PC Configuration and Management Standard, which requires the enabling of ENERGY STAR power management features on all eligible computers and monitors. EPA has achieved a 100 percent power management enabling rate on all eligible Agency computers and monitors currently in its seat management program.

Moving forward, EPA will use enterprise-wide management software to ensure continued adherence to power-management requirements. The software is capable of establishing power-management settings for computers and monitors over the network; auditing computers and monitors on the network for compliance; and providing a compliance report for follow-up on computers and monitors that are not maintaining the power-management settings pushed by the software. The software module for power management has been successfully deployed to all eligible equipment in the seat management program, or about 50 percent of the Agency. EPA is preparing to extend deployment to all remaining eligible equipment before the end of 2010.

In addition, EPA is working to ensure that duplex printing is set as the default for all eligible computers and imaging products with duplexing capability. The Agency's PC Configuration and Management Standard requires all work group (i.e., networked, shared) printers to be set to duplex as the default. EPA also relies on its seat management program to ensure that all participating Program Offices have duplexing set on eligible computers and imaging equipment as default and that the duplex printing features are enabled. Currently, all computers and imaging equipment deployed under this program are set to duplex by default, which accounts for about 50 percent of eligible desktop equipment. The status of default duplexing at Agency facilities not serviced by the seat management program has yet to be determined. EPA will initiate a baselining activity in 2010 to determine the extent to which eligible Agency computers and imaging products are meeting the default duplexing requirements. EPA will evaluate options for auditing and reporting regarding setting of duplex features as default.

The Agency's purchasing policies require the purchase of energy-efficient and environmentally preferred options and features on electronic products. For example, EPA's GPP requires procurement preference for EPEAT-registered electronic products.



During annual green purchasing training, purchase of EPEAT-registered equipment is reinforced. In addition, EPA's seat management program requires EPEAT-registered desktops, notebooks, and monitors with a Silver or higher rating, as well as delivery of ENERGY STAR qualified desktops, notebooks, monitors, and imaging equipment to internal customers.

2. Update Agency Policy to Reflect Environmentally Sound Practices for Disposition of All Agency Excess or Surplus Electronic Products.

EPA ensures environmentally sound disposition of electronic products in several ways. The Agency follows the GSA personal property disposition procedures of transfer, donation, sale, and recycling of electronic equipment and will continue to do so. EPA uses GSA's Computers for Learning (CFL) Program to donate electronics to eligible schools and non-profit organizations as mandated by E.O. 12999, Educational Technology: Ensuring for all Children in the Next Century.

The Agency uses electronics recyclers that are certified in the practices identified in the most current version of the "Responsible Recycling (R2) Practices for Use in Accredited Certification Programs for Electronics Recyclers," or an equivalent certification. EPA's CTS Program also mandates environmentally sound disposition of equipment removed from service under its associated contract.

EPA Personal Property Policy requires internal reuse of electronic equipment to the maximum extent possible. EPA's *Personal Property Policy and Procedures Manual* provides guidance and direction to the Agency's personal property staff to ensure that electronic equipment is reused prior to disposal. When electronic equipment is deemed "excess," it is recorded in the property database, making it available to other Offices and Regions for reuse.

EPA has met the 100-percent environmentally sound disposition rate requirement for electronic products in FY 2008 and FY 2009, and expects to continue to meet the 100-percent goal in future years. The Agency's Electronic Stewardship Implementation Plan outlines how the Agency is meeting the electronic stewardship goals of E.O. 13514 and E.O. 13423.

3. Update Agency Policy to Ensure Implementation of Best Management Practices for Energy Efficient Management of Servers and Federal Data Centers

Data centers and servers are playing an increasing role in improving energy efficiency across Federal IT operations. EPA has a strong foundation of Agency policies, standards, and guidance on its electronic stewardship practices, including energy management of servers and desktops.

EPA has assessed industry best management practices for data centers and has initiated several assessments performed by third-party organizations of EPA computing space. These detailed assessments from DOE's Save Energy Now Program and the Green Grid Association have assisted EPA in identifying opportunities for energy-efficient management of its servers and enterprise-class data center.



The Agency will provide examples of its best management practices for data centers in EPA's Data Center Consolidation Plan and in future submissions of the SSPP. Once formalized, best management practices will be included in Agency policy.

4. Ensure Goals Identify How the Agency Intends to Meet Technology Energy Consumption Reduction Goals in Its Data Centers

Through the Data Center Consolidation Initiative, EPA currently is identifying covered and non-covered facilities and striving to meet the following goals:

- Consolidate data centers across the Federal Government to achieve cost savings, energy consumption reductions, optimal space utilization, and improvements in IT asset utilization;
- Use automation, standardization, and security “hardening” of hardware and software platforms, including virtual hosts and virtual machines, to improve upon the implementation and monitoring of National Institute of Standards and Technology (NIST) 800-53 controls and Federal Information Security Management Act (FISMA) compliance; and
- Define and monitor standard operational metrics across agencies, achieve efficiency gains, and realize operational cost savings by improving the following statistics:
 - Server (CPU) Utilization (percentage),
 - Rack Space Utilization (percentage),
 - Rack Floor Utilization (percentage),
 - Power Usage/Square Foot, and
 - Power Usage Efficiency.

EPA currently is following the recommended OMB approach to develop its consolidation plan.

Covered data centers are those that are qualified on a set of core criteria, including floor capacity, power backup, location, power capacity, cooling capacity, and other factors. Over the past 3 years, the Agency has performed a thorough analysis of computer room, server, and storage management activities. A thorough analysis of data center consolidation was conducted in FY 2009, and the resulting recommendation was approved by EPA management.

Each of the covered data centers will be independently metered and monitored. For those covered data centers without meters, EPA will invest in appropriate energy-metering devices for installation at each primary data center location. EPA will baseline and measure at regular intervals: power usage efficiency (PUE), bandwidth utilization, and other appropriate industry and energy-usage metrics. In FY 2010, the Agency is working to determine performance measurements and a process for reporting.

EPA's plan to meet the energy reduction goals for its data centers will include increasing virtualization of data center activity, increasing activity hosted in a cloud computing environment, consolidation, and embracing efficient technologies through the following activities:



- Virtualization is already extensively used to support database hosting, and EPA currently is expanding virtualization to support the Web and application server tiers;
- The Agency will continue to expand its cloud computing environment and offer centralized acquisition of cloud computing services to ensure efficient Agency use of services in a secure manner; and
- EPA is planning to use the latest server technology, with high-efficiency power supplies, storage virtualization, and customized computer center floor space utilization.

D. Agency Status

EPA exceeded the 95 percent acquisition rate for EPEAT-registered electronic products in FY 2008 and FY 2009 and will continue to exceed the 95 percent goal in future fiscal years.

The Agency met 100 percent power management goals for applicable computer equipment in its seat management program. In FY 2010, EPA is implementing an enterprise-wide power management solution for all Agency computers. In FY 2011, the Agency expects to run audit reports to ensure that EPA remains at 100-percent implementation.

All computers and imaging equipment deployed under EPA's seat management program are set to duplex by default and the Agency will continue to deploy all new equipment at this same setting. In FY 2011, EPA will determine how it can ensure that all applicable equipment is using the duplex settings.

EPA met the 100 percent environmentally sound disposition rate of electronic products in FY 2008 and FY 2009, and will continue to meet that goal in future fiscal years through its many programs and initiatives.

The Agency has completed a phased virtualization program across its primary Tier III data center, including optimizing the efficient use of floor space and turning off air handlers, which will contribute to the efficiency of its data center. EPA has identified opportunities for consolidating computing services and has consolidated three smaller data centers/computer rooms into one at its HQ location.



SECTION 3: AGENCY SELF-EVALUATION

I. SELF-EVALUATION TABLE

Does your plan provide/consider overarching strategies and approaches for achieving long-term sustainability goals?	Yes
Does your plan identify milestones and resources needed for implementation?	Yes
Does your plan align with your agency's FY 2011 budget submission?	Yes
Is your plan consistent with your agency's FY 2011 budget and appropriately aligned to reflect your agency's planned FY 2012 budget submission?	Yes
Does your plan integrate existing E.O. and statutory requirements into a single framework and align with other existing mission- and management-related goals to make the best use of available resources?	Yes
Does your plan provide methods for obtaining the data needed to measure progress, evaluate results, and improve performance?	Yes



APPENDIX A: LIST OF ACRONYMS

Acronym	Definition
AA	Assistant Administrator
A/E	Architecture and Engineering
AEAMB	Architecture, Engineering, and Asset Management Branch
AFCP	Alternative Fuel Compliance Program
AFV	Alternative Fuel Vehicle
ARRA	American Recovery and Reinvestment Act of 2009
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
AST	Automotive Statistical Tool
AWBERC	Andrew W. Breidenbach Environmental Research Center
B&F	Buildings and Facilities
BAS	Building Automation System
BBtu	Billion British thermal units
BMPG	Building Management Plan Guidelines
BPA	Blanket Purchase Agreement
BPLP	Best Practices (Environmental) Leasing Provisions
Btu	British thermal unit
C&D	Construction and Demolition
CEQ	Council on Environmental Quality
CFL	Computers for Learning
CFR	Code of Federal Regulations
CH ₄	Methane
CI	Condition Index
CMM	Contracts Management Manual
CO ₂	Carbon Dioxide
COOP	Continuity Of Operations
CPG	Comprehensive Procurement Guidelines
CPU	Central Processing Unit
CTS	Customer Technology Solutions
CWA	Clean Water Act
CY	Calendar Year
DHS	Department of Homeland Security
DoD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
E.O.	Executive Order
E2PLAN	Energy and Environmental Performance, Leadership, Accountability, and (Carbon) Neutrality
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act of 2007
EMS	Environmental Management System
EPA	U.S. Environmental Protection Agency
EPAAct 1992	Energy Policy Act of 1992
EPAAct	Energy Policy Act of 2005
EPCRA	Emergency Planning and Community Right-to-Know Act



STRATEGIC SUSTAINABILITY PERFORMANCE PLAN

Acronym	Definition
EPEAT	Electronic Products Environmental Assessment Tool
EPP	Environmentally Preferable Purchasing Program
ESPC	Energy Savings Performance Contract
EUL	Enhanced Use Leases
FAR	Federal Acquisition Regulations
FEMP	Federal Energy Management Program
FISMA	Federal Information Security Management Act
FMSD	Facilities Management and Services Division
FOB	Facilities Operations Branch
FR	Federal Register
FRPP	Federal Real Property Profile
FTE	Full-Time Equivalent
FY	Fiscal Year
GGE	Gasoline Gallon Equivalent
GHG	Greenhouse Gas
GPP	Green Purchasing Plan
GSA	General Services Administration
GSF	Gross Square Foot
GSHP	Ground Source Heat Pump
GTWG	Green Travel Working Group
HEV	Hybrid Electric Vehicle
HFC	Hydrofluorocarbon
HQ	Headquarters
HUD	Housing and Urban Development
HVAC	Heating, Ventilation, and Air Conditioning
IMP	Inventory Management Plan
IPM	Integrated Pest Management
IT	Information Technology
kW	Kilowatt
LEED®	Leadership in Energy and Environmental Design
LEED-EB	LEED for Existing Buildings
LEED-NC	LEED for New Construction
MMBtu	Million Btu
MPG	Miles Per Gallon
MTCO ₂ e	Metric Tons of Carbon Dioxide Equivalent
N ₂ O	Nitrous Oxide
NEPA	National Environmental Policy Act
NIST	National Institute of Standards and Technology
O&M	Operations and Maintenance
OA	Office of Administration
OAM	Office of Acquisition Management
OARM	Office of Administration and Resources Management
OCFO	Office of the Chief Financial Officer
OCSP	Office of Chemical Safety and Pollution Prevention
ODS	Ozone-Depleting Substance
OEI	Office of Environmental Information
OMB	Office of Management and Budget
ORD	Office of Research and Development



STRATEGIC SUSTAINABILITY **PERFORMANCE PLAN**

Acronym	Definition
OSWER	Office of Solid Waste and Emergency Response
OW	Office of Water
P2	Pollution Prevention
PC	Personal Computer
PFC	Perfluorocarbon
PHEV	Plug-in Hybrid Electric Vehicle
PII	Personally Identifiable Information
PPA	Power Purchase Agreements
PUE	Power Usage Efficiency
QAP	Quality Assessment Plan
R2	Responsible Recycling
RCRA	Resource Conservation and Recovery Act
REC	Renewable Energy Credit
RO	Reverse Osmosis
ROI	Return On Investment
RTP	Research Triangle Park
SACO	Simplified Acquisition Contracting Officer
SBIP	Sustainable Building Implementation Plan
SFO	Solicitation for Offer
SFPB	Sustainable Facilities Practices Branch
SHEM	Safety, Health, and Environmental Management
SHEMD	Safety, Health, and Environmental Management Division
SHEMP	Safety, Health, and Environmental Management Program
SMD	Security Management Division
SNAP	Significant New Alternatives Policy Program
SSO	Senior Sustainability Officer
SSPP	Strategic Sustainability Performance Plan
STC	Science and Technology Center
T&D	Transmission and Distribution
TAG	Technical Advisory Group
TRI	Toxic Release Inventory
UESC	Utility Energy Services Contract
USDA	U.S. Department of Agriculture
USGBC	U.S. Green Building Council
VAV	Variable Air Volume
