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Source of document:	U.S. General Services Administration Office of the Inspector General FOIA Requester Service Center (H1C) 1275 First Street, NE, Room 1263 Washington, DC 20417 Fax: (202) 501-2727 Email: gsa.foia@gsa.gov

U.S. GENERAL SERVICES ADMINISTRATION
Office of Inspector General

September 3, 2013

Re: Freedom of Information Act Request (OIG Tracking Number 13-053)

This is in response to your request dated August 3, 2013, in which you requested "a copy of the documents and/or any other responses provided to the Bicameral Task Force on Climate Change." Your request was received in the General Services Administration (GSA), Office of Inspector General (OIG) on August 7, 2013.

We have searched the OIG files and have found documents responsive to your request, which we are releasing to you with certain information withheld pursuant to Exemption 6 of the FOIA. Exemption 6 of the FOIA, 5 U.S.C. §522(b)(6), relates to personal information regarding persons other than yourself. Release of this information would constitute a clearly unwarranted invasion of the personal privacy of the persons mentioned in the records.

You have the right to appeal the adequacy of our search or for disclosure of any undisclosed information by writing to the Freedom of Information Act Officer, Office of the Inspector General, General Services Administration, 1800 F Street, NW, Room 5326, Washington, D.C. 20405, within 120 days of your receipt of this letter. The appeal must be in writing and contain a statement of reasons for the appeal. Please enclose copies of your initial request and this response. The envelope and letter should be clearly marked as a "Freedom of Information Act Appeal."

Sincerely,

Richard P. Levi
Counsel to the Inspector General
(FOIA Officer)

Enclosure

U.S. GENERAL SERVICES ADMINISTRATION
Office of Inspector General

March 29, 2013

The Honorable Henry Waxman
Ranking Member
House Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

The Honorable Edward Markey
Ranking Member
House Committee on Natural Resources
1324 Longworth House Office Building
Washington, DC 20515

Dear Representatives,

I am in receipt of the Bicameral Task Force's letter of February 25, 2013. That letter asks my office questions related to actions by the General Services Administration (GSA) to address climate change. I appreciate the Task Force's interest and look forward to our continuing dialogue on these issues.

GSA, as the federal government's landlord and civilian procurement agency, is in a unique position to drive change across government. GSA has been charged with increasing energy efficiency, reducing greenhouse gas emissions, conserving water, reducing waste, supporting sustainable communities, and leveraging federal purchase power to promote environmentally responsible products. In our October 2012 Assessment of GSA's Major Management Challenges,[1] we identified challenges GSA faces in meeting its stated environmental goals. First, we noted that GSA needs a transparent management framework. Without a program to monitor and evaluate actual results, assessing progress in achieving GSA's sustainability goals will be difficult. Second, GSA needs to develop and adopt meaningful and balanced metrics to demonstrate economic lifecycle viability of green products and technologies. Sustainability metrics are not standardized, and reconciling the differences between multiple methodologies might prove difficult. Furthermore, GSA needs to be able to demonstrate the benefits of investing in sustainable technologies and processes by capturing accurate and complete data. Lastly, we noted that GSA has had difficulty in funding sustainability programs established to carry out its climate change goals.

With regard to the specific questions posed by the Task Force, we believe it would be appropriate to have the agency provide us with that information as an initial matter. Accordingly, we have asked GSA to provide us with the requested information for each question. We will then evaluate that information and respond to the Task Force with our assessment of GSA's progress in meeting those requirements. Until that information has been provided to my office, I write to inform the Task Force of my office's audit work on matters pertaining to environmental sustainability.

[1] Our current management challenges are included in GSA's Fiscal Year 2012 Agency Financial Report available at: http://www.gsa.gov/portal/category/104131.

At this point, our audit work on environmental issues has been largely tied to our oversight of GSA projects funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act). The Recovery Act provided GSA with a $5.55 billion appropriation, and GSA's Public Building Service (PBS) began multiple projects aimed at converting federal buildings into High-Performance Green Buildings. Our Recovery Act appropriation charged my office with overseeing and auditing GSA programs and projects funded under that Act. For instance, we audited the procurement of the air handler units, a photovoltaic roof, and a green vegetative roof at the Byrne Courthouse and Green Federal Building[2] in Philadelphia and found that the payback periods of 20.91 years for the air handler units, 61.2 years for the photovoltaic system, and 87.1 years for the vegetative roof did not represent a reasonable return on investment. Similarly, in our audit of a task order to upgrade lighting fixtures and the mechanical and electrical automation systems in the Danville Courthouse, [3] we noted our disagreement with funding a project with an estimated 103 year payback period. Additional Recovery Act project audits found, among other things, that energy conservation measures were improperly or insufficiently reviewed and approved before investments were made[4] and that no energy study had been undertaken before the procurement of lighting system upgrades for the Suitland Federal Center. [5]

We are considering expanding our audit work in this area to be more programmatic in scope as GSA makes further progress on its environmental goals. We will continue to inform the Task Force of our audit work as it relates to GSA's climate change initiatives, and we will provide GSA's account of its responsibilities and authorities as well as our assessment of the agency's progress in this area as soon as we are able.

Please feel free to contact me or (b) (6) of my staff at (b) (6) if we can answer any questions or provide further information.

Sincerely,

Brian D. Miller
Inspector General

cc: The Honorable Sheldon Whitehouse
The Honorable Benjamin Cardin

[2] Recovery Act Report – Procurement of Design Build Air Handler Unit/Photovoltaic Roof/Green Roof Project at the Byrne Courthouse and Green Federal Building- a Limited Scope Construction Project Funded by the American Recovery and Reinvestment Act of 2009, Report Number A090184-56, April 26, 2012.

[3] Recovery Act Memorandum – Administration of Task Order Number GS-P-05-10-SC-0044 for Construction Services in Support of the American Recovery and Reinvestment Act of 2009 at the Federal Building and United States Courthouse in Danville, Illinois, Memorandum Number A090184-18, March 29, 2012.

[4] Recovery Act Memorandum—Building Systems, Building Tune-up, and Lighting System Project for Group 7 Review of PBS's Limited Scope and Small Construction Projects Funded by the American Recovery and Reinvestment Act of 2009, Audit Number A090184-39/P/R, July 5, 2011; Recovery Act Memorandum—Energy Retrofit for the Ronald Reagan Federal Office Building, International Trade Center, and Parking Garage Review of PBS's Limited Scope and Small Construction Projects Funded by the American Recovery and Reinvestment Act of 2009 Audit Number A090184-28/P/R, June 14, 2011; Recovery Act Memorandum—Design/Build Services for the Winder Building Review of PBS's Limited Scope and Small Construction Projects Funded by the American Recovery and Reinvestment Act of 2009 Audit Number A090184-47/P/R, October 27, 2011.

[5] Recovery Act Memorandum- Procurement of Lighting System Upgrades for the Suitland Federal Center—a Public Buildings Service Small Project Funded by the American Recovery and Reinvestment Act of 2009, January 5, 2011.

U.S. General Services Administration
Office of Inspector General

MEMORANDUM FOR DANIEL TANGHERLINI
ACTING ADMINISTRATOR
GENERAL SERVICES ADMINISTRATION

FROM: BRIAN D. MILLER
INSPECTOR GENERAL

DATE: March 11, 2013

SUBJECT: Congressional request for the General Services Administration's (GSA) climate change authorities

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I am in receipt of a February 25, 2013, letter from the co-chairs of the Congressional Bicameral Task Force on Climate Change. The letter (attached) asks my office to (1) identify the existing requirements in (climate change) legislation, regulation, executive orders, and other directives that apply to GSA; (2) to assess GSA's progress in meeting these requirements; and (3) to make recommendations for improving its performance in meeting these requirements. Furthermore, the letter asks for (4) my office's assessment of the authorities GSA has to reduce emissions of heat-trapping pollution; (5) make the nation more resilient to the effects of climate change; and (6) the most effective additional steps GSA could take to reduce emissions or strengthen resiliency. That letter asked for our initial response by March 29.

We believe GSA has the requested information and is in the best position to address these questions in the first instance. Accordingly, we ask that the agency provide us with the requested information for each question, so that we may evaluate that information and prepare an appropriate response. Because of the March 29 due date, we ask that you give this matter prompt attention.

Please feel free to contact me at (202) 501-0450, or have your staff contact (b) (6) at (b) (6), if you would like to discuss this further.

Attachment

U.S. GENERAL SERVICES ADMINISTRATION
Office of Inspector General

July 18, 2013

The Honorable Henry Waxman
Ranking Member
House Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

Dear Representative Waxman,

I am following up to my letter of March 29, 2013, in which I responded to the Bicameral Task Force's request for information on actions by the General Services Administration (GSA) to address climate change. In my March 29th letter, I indicated that my office asked GSA to provide us with the requested information, specifically to identify the existing requirements in climate change legislation, regulation, executive orders, and other directives that apply to GSA. My office has received GSA's response, and it is enclosed herein. I hope that the information provided meets your needs.

To date, our audit work on climate change has been entirely related to our monitoring of GSA's use of Recovery Act funds or GSA's public buildings and procurement functions. As I mentioned in my earlier letter, we are considering expanding our audit work in this year to be more programmatic in scope as GSA makes progress on its environmental goals. As we continue to audit and investigate instances of fraud, waste, and mismanagement in GSA's real property and acquisition activities, we will attempt to assess related climate change functions to the best of our ability. We look forward to further dialogue with the Task Force on these matters.

Please feel free to call me at 202-501-0450 or have your staff call (b) (6) at (b) (6) if we can answer any questions or provide further information.

Sincerely,

Brian D. Miller
Inspector General

Enclosure
cc: The Honorable Sheldon Whitehouse
The Honorable Benjamin Cardin
The Honorable Edward Markey

Enclosure

June 21, 2013

MEMORANDUM FOR BRIAN D. MILLER
INSPECTOR GENERAL
OFFICE OF THE INSPECTOR GENERAL (J)

FROM: JIYOUNG C. PARK
ASSOCIATE ADMINISTRATOR
OFFICE OF SMALL BUSINESS UTILIZATION (E)

SUBJECT: Congressional Request for the General Services Administration's Climate Change Authorities

This memorandum is in response to an Inspector General memorandum dated March 11, 2013, with subject title: Congressional request for the U.S. General Services Administration (GSA) climate change authorities. GSA recognizes that the current and future impacts from climate change present one of the most serious threats to the Federal Government's ability to effectively carry out its mission, and that the Government Accountability Office has added climate change to its High Risk List. GSA is taking active steps to mitigate greenhouse gas (GHG) emissions from Federal buildings, vehicles, procurement activities, and overall operations in order to limit the Federal Government's contribution to climate change and mitigate the fiscal risks it poses.

In addition, GSA is working with other agencies to assess potential future climate impacts and identify and implement adaptation mechanisms that will insulate government facilities and operations from these impacts. GSA has made significant progress towards meeting legislative and executive mandates aimed at mitigating climate change risks. Following is a summary of GSA climate change requirements organized in two main sections. The first outlines requirements, progress, and recommendations for improvement for each major operational unit A-F. The second section outlines an assessment of current authorities and additional actions GSA could take—some of which would require new legislative authority.

Section I: Requirements, Progress, and Recommendations for Improvement 2

A. Federal Buildings.....2

B. Federal Fleet 6

C. GSA Internal Fleet.....8

D. Electronic Stewardship.....9

E. Federal Supply Chain 10

F. Climate Change Adaptation.....11

Section II: Ideas on Future Mitigation Actions that Warrant Consideration and Discussion ... 12

Section I: Requirements, Progress, and Recommendations for Improvement

GSA is meeting or exceeding most requirements. Recommendations for improving performance indicate planned work already underway in Fiscal Year (FY) 2013.

A. Federal Buildings

Scope and Authorities

The GSA Public Buildings Service (PBS) owns or leases 9,624 assets, maintains an inventory of more than 370.2 million square feet of workspace for 1.1 million Federal employees, and preserves more than 480 historic properties. GSA directly procures energy for more than 1,700 leased and owned buildings, totaling around 210 million square feet of space. In FY 2012, GSA procured more than 16.3 trillion BTUs of energy for these buildings at a cost of over $377 million; this was down from 18.8 trillion BTUs and $439 million in FY 2008, the base year of GSA's GHG inventory. GSA's current leased inventory includes 8,845 leases (totaling 196.57 million rentable square feet) within 7,331 buildings.

Requirements and Progress

- Executive Order 13514, Section 2(a) requires Federal agencies to track and reduce scope 1 and 2[1] GHG emissions from building energy consumption from a FY 2008 baseline.
    - In FY 2010, GSA established a scope 1 and 2 GHG emissions reduction target of 28.7 percent from FY 2008 levels by FY 2020. GSA exceeded its FY 2020 target in FY 2012, having achieved 36.6 percent reduction (over 828,000 metric tons of carbon dioxide equivalents) from FY 2008 levels, which is equivalent to the annual emissions from over 172,000 passenger vehicles.
    - GSA also developed and provides a free online tool, called the Carbon Footprint Tool, that Federal agencies can use to measure, track, and report their GHG

[1] GSA reports estimated emissions from GSA-owned buildings and those leases where GSA is responsible for making utility payments directly to utility providers. GSA does not report emissions from leased space where utilities are provided by the landlord and included in the lease payment. Scope 1 emissions reported are those resulting from the direct combustion of fuels on-site (heating oil and natural gas). Scope 2 emissions are those resulting the generation of energy that is purchased from a third party and delivered to GSA sites (electricity, purchased steam, purchased chilled water).

emissions in accordance with the GHG emissions inventory guidance established in response to Executive Order 13514. GSA continuously improves the functionality of the tool in response to changes in the Federal GHG emissions guidance and user recommendations. The latest change will allow users to account for GHG emissions associated with leased space.

- The Energy Independence and Security Act of 2007 (EISA 2007), Section 431 requires Federal agencies to reduce Federal building energy intensity (measured in BTU/GSF) by 30 percent from FY 2003 levels by FY 2015.
    - In FY 2012, GSA reduced energy usage per square foot by 24.5 percent from FY 2003 levels in its buildings that are subject to EISA 2007, ahead of its target of 21 percent. GSA is committed to reducing energy intensity in EISA 2007 subject buildings by 37.5 percent from FY 2003 levels by FY 2020.
    - These achievements are being made possible in large part by over 400 Recovery Act investments that are making GSA facilities more energy efficient and reducing GHG emissions.
- The Energy Policy Act of 2005 (EPAct 2005), Section 203 requires that the Federal Government's renewable electricity consumption meet or exceed three percent from FY 2007-2009, with increases to at least five percent in FY 2010-2012 and seven and a half percent in 2013 and thereafter. At least half of agency renewable energy must come from new sources.
    - In FY 2012, 20.9 percent of electricity procured or generated by GSA came from renewable sources, well ahead of the EPAct 2005 target of five percent and GSA's internal target of 14 percent.
    - Seventy of GSA's projects funded by the American Recovery and Reinvestment Act of 2009 generate renewable energy from onsite photovoltaic solar panels or wind turbines, and these are expected to produce 29 million kilowatt-hours of electricity each year.
- *Presidential Memorandum--Implementation of Energy Savings Projects and Performance-Based Contracting for Energy Savings* requires the Federal Government to enter into a minimum of $2 billion in performance-based contracts in Federal building energy efficiency within 24 months from its issuance.
    - In FY 2012, GSA initiated its Deep Energy Retrofit Program, in which it will enter into Energy Savings Performance Contracts (ESPCs) with energy service companies in order to achieve the maximum energy savings possible in 23 Federal facilities, totaling approximately 16 million square feet. These retrofits will come at no net cost to the taxpayer; rather, they are paid for through energy savings over time. The results of this challenge—to double the typical energy savings compared to typical ESPCs—will support the President's Performance Contracting Challenge, and help other agencies in their achievement of their commitments to this initiative.
    - GSA is on track to meet its requirements to award $175 million worth of projects by December 30, 2013.
- Executive Order 13514, Section 2(g) requires agencies to ensure that 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*[2] (Guiding Principles). It also requires agencies to ensure that at least 15

[2] The Guiding Principles focus on the following five topic areas for both new construction and major renovations:

1. Employ integrated design principles (new construction)/Employ integrated assessment, operation, and management principles (existing buildings)
2. Optimize energy performance

percent of their existing buildings (above 5,000 gross square feet) and building leases (above 5,000 gross square feet) meet the Guiding Principles by FY 2015 and that the agency makes annual progress toward 100-percent conformance with the Guiding Principles.

- In FY 2012, 10.8 percent of the GSA building inventory (government-owned buildings and leased space) met the Guiding Principles, exceeding the FY 2012 target of 10 percent. GSA continues to implement processes, procedures and tools to achieve the 2013 goals and is on track to achieve 18 percent compliance with the Guiding Principles by 2015, exceeding the Executive Order 13514 (EO 13514) goal of 15 percent.
- GSA leases incorporate over 30 mandatory green lease paragraphs aligning with Guiding Principle compliance, including requirements related to energy efficiency, systems commissioning, water conservation, and indoor air quality.

- EISA 2007, Section 433 requires that buildings be designed so that the fossil fuel-generated energy consumption of the buildings is reduced, as compared with such energy consumption by a similar building in FY 2003 (as measured by Commercial Buildings Energy Consumption Survey or Residential Energy Consumption Survey data from the Energy Information Agency), by 55 percent in FY 2010, 65 percent in FY 2015, 80 percent in FY 2020, 90 percent in FY 2025 and 100 percent in FY 2030.
  - GSA incorporated this requirement into P100, Facilities Standards for the Public Buildings Service, November 2010. Through the Office of Design and Construction's Integrated Design Review process, subject matter experts work with design teams to ensure sustainable performance is met in capital construction projects.
- Executive Order 13514, Section 2 (g) requires that agencies, beginning in 2020 and thereafter, ensure that all new Federal buildings that enter the planning process are designed to achieve zero-net-energy by 2030.
  - GSA identified three design projects in the years 2010 and 2011 to work towards net zero site energy. As funding for capital projects was limited for 2012 and 2013, GSA has been collecting best practices and case studies.
  - On February 20, 2013, GSA re-dedicated the Wayne N. Aspinall Federal Building and Courthouse in Grand Junction, CO. The original 1918 building, which is on the historic register, was enhanced to utilize original design features with modern efficient systems to be 50 percent more efficient than a typical office and produce 100 percent of its energy needs on site. Although the design decisions cannot be carbon copied, this project does prove that net zero site energy is possible on a typical budget and that it can be done in an historic structure.
- EISA 2007, Section 433 requires that sustainable design principles be applied to the sitting, design, and construction of buildings subject to the standards identified by DOE. A certification system and level for green buildings shall be identified by DOE in consultation with the Department of Defense (DOD) and GSA based on Director of Federal High-Performance Green Buildings (GSA) findings.
  - In 2000, GSA required all capital construction to achieve a LEED Silver rating; and, in 2010, GSA raised the level to Gold. As of March 4, 2013, GSA has 72 owned buildings that have achieved a LEED rating. GSA has also worked with

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3. Protect and conserve water
4. Enhance indoor environmental quality
5. Reduce environmental impact of materials

Optimizing building energy performance has a significant and direct impact on greenhouse gas emissions.

several green building rating systems to make them more useful for the Federal Government.

- Executive Order 13514, Sections 2(f) and 10, building on previous requirements under Executive Orders 12072 and 13006, require that agencies promote sustainable development by modifying agency policies to ensure that planning for new Federal facilities and lease facilities include consideration of proximity to transit and urban cores and rural town centers, and pedestrian friendliness in order to, among other reasons, reduce Scope 3 emissions associated with employee commuting.
    - GSA participated in an interagency work group with DOT, EPA, HUD, and DOD to develop Implementing Instructions for agencies to follow in rewriting and developing internal agency policies to include location efficiency in agency location decisions. Agencies are required to report on their progress to the White House Council on Environmental Quality (CEQ) and the Office of Management and Budget (OMB) in implementing these changes. These instructions were issued in September 2011.[3]
    - GSA is partnering with EPA to develop a Sustainable Locations Index that measures, among other factors, the connection times and distances via transit, of the working age population in a given region to potential Federal location. This tool should be completed by summer 2013. This tool will be one measure available for analyzing GSA's real estate inventory through the agency's GIS tools, outlined below.
    - GSA is developing a specific GIS tool, known as the Multi Asset Planning (MAP) tool, to allow agency personnel the ability to conduct quick, web-based analysis of sustainable location factors across the GSA inventory, such as proximity to transit and amenities, and walkability, and to include this analysis in complex inventory decisions. The tool is currently live and available to employees behind the firewall and will continue to be improved in coming months based on user feedback.
    - The Employee Commuter Survey portion of the GSA Carbon Footprint Tool enables agencies to conduct commuter surveys as part of their GHG emissions inventories. Twenty-four agencies currently use the commuter survey.
- EISA 2007, Section 435 prohibits Federal agencies, effective December 19, 2010, from leasing buildings that have not earned an ENERGY STAR label.
    - All leases awarded on or after December 19, 2010, require that a building have earned the Energy Star label within 12 months prior to final proposal revisions, unless the lease meets specific exceptions. Cost-effective energy efficiency and conservation improvements are still required for these exceptions. All new construction projects must achieve an Energy Star label. Nine percent of GSA's leases, representing 24 percent of total leased rentable square footage, are located within Energy Star labeled space.
- A number of statutes and Executive Orders as well as the Federal Acquisition Regulation (FAR) require agencies to advance sustainable acquisition in several areas that reduce scope 3 GHG emissions. These include, for example, requirements to purchase - and to require that our contractors purchase - products that are energy-efficient, recycled content, and non-ozone-depleting.[4]

[3] "Implementing Instructions--Sustainable Location for Federal Facilities." Council on Environmental Quality. September 15, 2011.

[4] See Section IE, Federal Supply Chain, for specific applicable authorities.

- Over the last two years, PBS has revised all national service and construction contract scope of work templates and guidance to require the use or provision by contractors of sustainable products.
- Procurement Management Reviews (PMRs), conducted on a regular basis by national office in the regions, now include sustainable product purchasing checks for PBS and will for the GSA Federal Acquisition Service (FAS) beginning this year.

Recommendations for Improving Performance

- GSA is working to estimate scope 3 GHG emissions from Federal leased space in which it does not directly pay for utilities, and will identify ways it can work with lessors to reduce GHG emissions from leased space.
- GSA has partnered with agencies on the integration of facility and data center operations, using the best in class operational and design guidelines developed by the Lawrence Berkeley National Laboratory. These have the potential to save on both facility energy costs and the energy used to operate the computer equipment. Only by designing the operations of both facility and computer operations together can substantive savings be achieved. The savings, if aggressively and comprehensively implemented can save up to 50 percent of the energy consumption of a typical data center. GSA has implemented these in two major data centers (with Agriculture and SSA) and is applying the principles in the President's Performance Contracting Challenge.
- The Green Proving Ground (GPG) program leverages GSA's real estate portfolio to demonstrate and validate emerging building technologies. Annually, the program selects a limited number of technologies or practices for evaluation based on GSA's programmatic needs. These technologies support multiple authorities described above.
    - The Department of Energy's National Laboratories performs the technical evaluation and uses the findings to support the development of GSA performance specifications and inform decision-making within GSA, other Federal agencies, and the real estate industry.
    - Since the start of the program, GPG released results for three innovative technologies that effectively reduced energy usage: a network of wireless sensors that enabled a cooling load reduction in an efficient data center; smart power strips that turn off individual plugs when they are not needed; and "occupant responsive lighting", which consists of locating lighting fixtures over individual cubicles, and using IT technology to individually control them.
    - GSA continues to select technologies to test, evaluate technologies, and facilitate deployment of proven technologies. PBS will continue work with FAS and customer agencies to identify opportunities to deploy proven technologies at scale.

B. Federal Fleet

Scope and Authorities

Federal agencies are responsible for making decisions about the number and type of vehicles they need to meet their missions. Federal guidelines for vehicle acquisition ask agencies to consider a number of factors, including agency mission, price, fuel economy, and greenhouse gas score when acquiring vehicles. Unless they are granted a waiver of procurement authority from GSA, Federal agencies are required to purchase vehicles through GSA Automotive. Alternatively, agencies may lease vehicles from GSA Fleet, or a commercial source. GSA Automotive specializes in the acquisition of vehicles, and is designated a mandatory source for vehicle purchases made by all Federal Government agencies under FPMR 101-26.501. GSA

Fleet is the second largest non-tactical Federal fleet in the U.S. government, with currently over 214,000 vehicles and 75 Federal agency customers.

Federal agencies determine when and how to dispose of vehicles at end-of-life, but GSA requires agencies to retain vehicles for a minimum number of years or miles. Agencies may dispose of vehicles no longer needed and declared excess prior to meeting one of these minimum requirements only if a vehicle needs body or mechanical repairs that exceed the fair market value of the motor vehicle. Agencies may dispose of vehicles through the exchange/sale authority, transferring them to other agencies, selling them, or donating them.

Requirements and Progress

- EISA 2007, Section 142 requires Federal agencies with 20 or more vehicles located in the U.S. to increase annual alternative fuel use 10 percent each year through FY 2015 compared to a FY 2005 baseline.
    - GSA has increased the number of available alternative fuel vehicle options: GSA offered 291 AFV options in FY 2010; 502 in FY 2011; 894 in FY 2012; and 1,532 to date in FY 2013, accounting for a 426 percent increase in AFV offerings over the four fiscal years. In FY 2012, GSA also introduced several charging stations vendors to the Automotive Super Store, Schedule 23V, for Federal agencies to utilize when purchasing electric vehicles.
- *Presidential Memorandum--Federal Fleet Performance*, requires Federal agencies to take significant steps to increase the number of alternative fuel vehicles in their fleets; procure smaller, more fuel-efficient executive vehicles; and optimize the size of their fleets using a Vehicle Allocation Methodology (VAM) developed by GSA. Furthermore, by December 31, 2015, all new light duty vehicles leased or purchased by agencies must be alternative fueled vehicles.
    - GSA developed and distributed the VAM to agencies in 2011. Agencies completed assessments of their fleets; developed optimal fleet inventory targets; and submitted fleet management plans to GSA on how they will achieve their posted targets. GSA shared these plans with OMB and CEQ and issued recommendations to agencies on how to implement their fleet plans, including recommendations on fleet right-sizing, the procurement of alternative vehicles, and vehicle sharing.
- Executive Order 13423 and EISA 2007 require Federal agencies with 20 or more vehicles to reduce fleet petroleum usage by 2 percent each year against a FY 2005 baseline out to FY 2015. Executive Order 13514 extended the sunset year for this goal out to FY 2020. Thus, GSA must reduce petroleum usage in its fleet by 30 percent from FY 2005 levels by FY 2020.
    - GSA Fleet replaced retired vehicles in the leased fleet with new, more fuel efficient vehicles, resulting in a 24 percent mile per gallon (MPG) improvement in FY 2010, a 21 percent MPG improvement in FY 2011, and a 15 percent MPG improvement in FY 2012.
    - In FY 2012, GSA launched an Electric Vehicle Program, leasing 116 electric vehicles to 21 agencies across nine cities. GSA also worked with the agencies to install charging infrastructure for these vehicles. This program ensures GSA and other Federal agencies have an opportunity to gain experience with the new technologies and introduced a vehicle option that has the potential to drastically reduce petroleum imports and GHG emissions.
- Executive Order 13514, Section 2(f) requires agencies to advance regional and local integrated planning by “participating in regional transportation planning and recognizing existing community transportation infrastructure.”

    - GSA participates in local-level transportation planning efforts—particularly the Department of Energy's (DOE) Clean Cities Program— to reduce congestion, improve access to cleaner modes of transportation, and reduce the environmental and social impacts associated with commuting.
- GSA is also supporting other efforts that will reduce GHG emissions from the Federal fleet.
    - GSA completed an intra-agency vehicle sharing pilot with the Navy. GSA is using the results of this pilot to assess the costs and benefits of vehicle sharing and examine the criteria necessary to make vehicle sharing viable for the Federal Government.

Recommendations for Improving Performance
Some of the major efforts planned or underway for FY 2013 are as follows:

- GSA will continue to educate customers on ways they can increase the fuel efficiency of the vehicles they lease from GSA and conduct meetings with customers to discuss specific methodologies they can apply to achieve desired results for their fleets.
- GSA is incorporating the VAM process into the regular annual agency Federal Automotive Statistical Tool (FAST) reporting process. Agencies will provide updated VAM optimal fleet inventory projections and fleet management plans through FAST incorporating this as an ongoing and continuous process.
- GSA will further investigate the use of vehicle sharing in the Federal Government, through the implementation of a pilot examining the viability of a GSA-developed vehicle dispatch system that can be used by agencies to manage vehicle sharing in their internal fleets and the implementation of a multi-agency vehicle sharing pilot using commercially available vehicle sharing technology.
- GSA has commenced the second phase of its Electric Vehicle Program, which intends to place an additional 200 electric vehicles, along with requisite charging infrastructure, in locations across the country.

C. GSA Internal Fleet
Scope and Authorities
The GSA internal fleet consists of 1,163 vehicles leased from GSA Fleet that are used by GSA to execute its mission.

Requirements and Progress

- Executive Order 13514, Section 2(a) requires Federal agencies to track and reduce scope 1 and 2[5] GHG emissions from fleet fuel consumption from a FY 2008 baseline.
    - In FY 2012, GSA reduced scope 1 GHG emissions from its internal fleet by 17 percent from FY 2008 levels.
- Executive Order 13423 and EISA 2007, Section 142 require Federal agencies with 20 or more vehicles to reduce fleet petroleum usage by two percent each year against a FY 2005 baseline out to FY 2015. Executive Order 13514 extended the sunset year for this goal out to FY 2020. Thus, agencies must reduce petroleum usage in their fleets by 30 percent from FY 2005 levels by FY 2020.
    - In FY 2012, GSA reduced petroleum usage within its internal fleet by 36 percent (over 200,000 gallons) from FY 2005 levels, well ahead of the EISA 2007 target of 14 percent.

[5] GSA only reports emissions resulting from the operation of vehicles owned or leased for internal use by GSA employees. GSA excludes emissions from motor vehicles that GSA leases to other Federal agencies for their use, as well as non-road vehicles.

- *Presidential Memorandum--Federal Fleet Performance*, requires Federal agencies to take significant steps to increase the number of alternative fuel vehicles in their fleets; procure smaller, more fuel-efficient executive vehicles; and optimize the size of their fleets using a Vehicle Allocation Methodology (VAM) developed by GSA. Furthermore, by December 31, 2015, all new light duty vehicles leased or purchased by agencies must be alternative fuel vehicles.
    - GSA has surveyed its internal fleet using the VAM and made reductions. As of the end of FY 2012, GSA reduced the size of its fleet from 1,217 vehicles in FY 2011 to 1,163. This is a 4.4 percent decrease in fleet size and is slightly greater than the reduction of four percent that GSA committed to in its VAM by the end of FY 2015.
    - As of the end of FY 2012, 79 percent of GSA's internal fleet vehicles were alternative fuel vehicles. GSA will continue to increase the number of alternative fuel vehicles in its internal fleet and ensure that all new light-duty vehicles procured are alternative fuel vehicles by the end of FY 2015.

D. Electronic Stewardship

Scope and Authorities

GSA, as landlord for the Federal Government, has a role in reducing the IT energy footprint in its buildings. There are more than 1,400 data centers operated by tenant agencies in space leased from GSA. The total area of these high energy consumption spaces (excluding server closets with area less than 500 square feet) comprises 3.6 million square feet. In February 2010, the Federal CIO created the Federal Data Center Consolidation Initiative (FDCCI) to reverse the growth of Federal data centers. The FDCCI seeks to curb this increase by reducing the cost of data center hardware, software, and operations; shifting IT investments to more efficient computing platforms; reducing the overall energy and real estate footprint of government data centers; and increasing IT security. GSA's Office of Citizen Services (OCSIT) and FAS supports this government-wide effort.

Requirements and Progress

- EISA 2007, Section 431 and Executive Order 13514, Section 2(a) require agencies to reduce energy intensity; and to reduce scope 1 and 2 GHG emissions, respectively[6]
    - GSA has proven an innovative technology that can be widely deployed to reduce data center energy consumption and GHG emissions. PBS GPG 2011 assessment of wireless sensor technology suggested that providing real-time, floor-to-ceiling information on humidity, air pressure and temperature conditions could enable data center operators to improve data center energy efficiency significantly, reducing in a test facility total power usage by 17 percent, saving $30,000 in energy costs per year and reducing annual GHG emissions by 542 metric tons of CO2.
- Executive Order 13514, Section 2(i) requires agencies to promote electronic stewardship by ensuring procurement preference for Electronic Product Environmental Assessment Tool- (EPEAT) registered electronic products; establishing and implementing policies to enable power management and other energy-efficient features on all eligible agency electronic products; ensuring the procurement of Energy Star and Federal Energy Management Program- (FEMP) designated electronic equipment; and implementing best management practices for energy-efficient management of servers and Federal data centers.

[6] See Section 1A Federal Buildings, which outlines how GSA is ahead of targets for meeting these requirements.

    - 100 percent of GSA's electronics acquisitions are FEMP- designated and ENERGY STAR qualified; 100 percent of GSA electronic product acquisitions are EPEAT- registered; and 100 percent of computers are power-management enabled.
    - GSA offers EPEAT-registered computers, laptops, and monitors for agencies to purchase and is adding imaging equipment and televisions registered against the new EPEAT standards, as they become available, through both schedules and the Federal Strategic Sourcing Initiative imaging equipment blanket purchase agreements.
    - In FY 2011 and FY 2012, GSA met its target of consolidating 5 of its regional data centers, and it will consolidate two additional regional data centers in FY 2013. GSA will consolidate 15 regional data centers into three by 2015. GSA has also implemented advanced sub-metering to identify energy efficiency opportunities for three data centers that will remain after consolidation.
- Presidential Memorandum on Performance-based Contracting[7]
    - GSA has established a mechanism to allow tenant agencies to, over time, pay incrementally to purchase more efficient equipment, which will help agencies reduce energy consumption and overtime utility payments for maintaining 24/7 operations.
- The Federal Data Center Consolidation Initiative requires GSA to stand up government-wide contracts to support initiative goals.
    - GSA has issued several contracts and streamlined processes to assist agencies with consolidation efforts: Infrastructure as a Service BPA – offers cloud storage, web hosting, and virtual machines; Email as a Service BPA – offers cloud email services, office automation, records management, migration and integration services; Data Center Services – offers a suite of data center services, including: Business continuity, and disaster recovery, Data center architecture, Data center operations, Data storage, hosting and warehousing; FedRAMP – promotes the Federal use of cloud computing by creating common, shared security standards.

Recommendations for Improving Performance

- GSA continues to build partnerships across its organizational units PBS, FAS, OCIO, and OCSIT, and the Federal CIO Council to fully meet these requirements and identify integrated, highest impact solutions.

E. Federal Supply Chain

Scope and Authorities

GSA offers a broad range of products and services that can assist agencies to reduce their energy use and, thereby, their GHG impacts. These include information technology solutions, telecommunications services, assisted acquisition services, travel and transportation management solutions, motor vehicles and fleet services, government purchase cards, office supplies, tools, and equipment. GSA provides Federal agencies with personal property management services to help them dispose of their excess and surplus personal property, promoting recycling and reuse, both of which reduce GHG emissions through reduced materials extraction and beneficiation.

Federal agencies have statutory and regulatory requirements to purchase certain products with environmental and energy attributes: recycled content products, Energy Star and FEMP-

[7] See Section 1A Federal Buildings, which outlines how GSA is meeting performance-based contracting requirements.

designated energy efficient products, alternative fuel vehicles and alternative fuels, biobased products, and alternatives to ozone depleting substances. GSA assists Federal agencies in meeting these requirements by offering more green products and services, and increasing sales of those products and services, but GSA does not have the ability to force or mandate agency purchasing. Agencies ultimately choose whether or not to buy goods or services with reduced environmental impacts and that result in lower GHG emissions.

Requirements and Progress

- Section 13 of Executive Order 13514 required GSA, in conjunction with the Department of Defense, the Environmental Protection Agency, and other agencies to review and provide recommendations CEQ and the Office of Federal Procurement Policy (OFPP) regarding the feasibility of introducing GHG and other vendor sustainability considerations into Federal procurements to assist Federal agencies to track and reduce their Scope 3 GHG emissions.
    - GSA convened an interagency working group that developed an initial feasibility assessment (April 2010) and more detailed recommendations (February 2013) for a path forward to integrating GHG and sustainability considerations into the Federal procurements to reduce the GHGs associated with the products commonly procured. GSA found it is feasible to do so, but that it must be accomplished in an open, deliberate, step by step process, given the significant differences in knowledge and activity between large and small vendors and between sectors. The final recommendations were submitted to CEQ and OFPP in February 2013.
- Section 104 of the Energy Policy Act of 2005 amends the National Energy Conservation Policy Act by adding Section 553, *Federal Procurement of Energy Efficient Product*s. GSA and the Defense Logistics Agency are required to clearly identify Energy Star and FEMP-designated energy efficient products. GSA and DLA also are required to supply only these products except when a purchasing agency specifies in writing that these products will not meet the purchaser's functional requirements or are not cost effective.
    - In GSA *Advantage,* agencies can use icons to identify green products, including Energy Star and FEMP-designated products, available for purchase. GSA established a process with the Energy Star program and EPEAT to receive monthly data transfers of lists of registered products for use in updating the *Advantage* listings. In addition, GSA is greening its multiple award schedules by identifying opportunities to require vendors to offer only green products, including Energy Star items. Energy Star only requirements for specific products have been added to several schedules.

Recommendations for Improving Performance

- As part of the Section 13 feasibility work, GSA and EPA's climate change program hosted a two year small business greenhouse gas pilot. The lessons learned from that pilot and other information gathered by the Section 13 Program Management Office will be used to develop educational materials for small business vendors. GSA also is piloting the use of sustainability considerations in several contracts and Federal Strategic Sourcing Initiatives to further learn what types of considerations are appropriate in different types of contract actions and where in the contracting process to apply them (e.g., market research, evaluation process, scope of work).

F. Climate Change Adaptation

Requirements and Progress

- Section 8(i) of Executive Order 13514 requires Federal agencies to evaluate agency climate-change risks and vulnerabilities to manage the effects of climate change on the agency's operations and mission in both the short and long term. Additionally, CEQ issued a set of Implementing Instructions for Federal Agency Adaptation Planning. The Instructions inform agencies on how to integrate climate change adaptation into their planning, operations, policies, and programs, as recommended by the Interagency Climate Change Adaptation Task Force in its October 2010 Progress Report to the President. GSA has and continues to assess the vulnerabilities of the agency's assets, including facilities and the supply chain.

  The Federal Property and Administrative Services Act of 1949, as amended, (Sec.210) requires the GSA to maintain and protect property. Climate adaptation planning is a prudent risk management practice for long term maintenance and protection of real property, and GSA's work in this area is designed to assess and mitigate risks to the long-term use of the real property for its use in supporting the missions of the agencies occupying and using the property.
  - GSA completed its Climate Change Adaptation Action Plan[8] and submitted the FY 2013 action plan with the FY 2012 Sustainability Plan. The action plan outlines important actions that GSA has taken to date and actions that GSA will undertake in FY 2013 to better understand and address the risks and opportunities brought on by climate change. In FY 2011, GSA completed a high level climate vulnerability assessment followed by with a series of FY12 climate change adaptation priority actions. In FY 2013, GSA is working to integrate adaptation into key business processes and documents; begin planning and training sessions that will help GSA better serve its customers with respect to climate change risk management; repeat and expand two regional pilots assessing projected climate change risks and adaptation priorities; assess demand and supply for climate science and adaptation service offerings to assist agencies with adaptation planning and risk management; and work with other agencies to continue to advance planning tools and actionable science.

Recommendations for Improving Performance

- As part of GSA's FY 2012 and 2013 adaptation activities, the agency conducted regional climate change adaptation planning scenario sessions with FAS and PBS staff in Regions 6 (Kansas City, MO) and 11 (National Capital Region). The Region 11 session, known as the National Capital Region Climate Risks Preparation and Adaptation Pilot, was selected in February 2013 by CEQ as one of six GreenGov Spotlight Communities. This program highlights the collaborative efforts of multiple Federal partners that are helping the Federal Government achieve the energy and sustainability goals and targets in Executive Order 13514. Through the remainder of FY 2013, GSA will participate in the GreenGov Spotlight Community to share its successes and challenges in implementing the pilot in an effort to assist other Federal agencies in replicating similar adaptation actions across the country.

Section II: Ideas on Future Mitigation Actions that Warrant Consideration and Discussion

This section details a number of ideas on additional actions and new authorities that would allow GSA to further reduce federal greenhouse gas emissions. These ideas warrant further

[8] The GSA Climate Adaptation Action Plan is available at: http://www.gsa.gov/portal/getMediaData?mediaId=162947

examination and discussion as the Federal Government identifies new ways to mitigate GHG emissions.

Idea 1: Long term on-site renewable power purchase agreement (PPA) authority
PPAs are a renewable energy investment vehicle in which a private entity purchases, installs, owns, operates and maintains customer-sited renewable equipment in exchange for the customer agreeing to purchase power from the installed equipment. FAR Part 41 Utility Services provides GSA with the ability to delegate the authority to enter into a PPA contract of up to 10 years. A 10-year PPA contract period severely limits the payback period for the generation investment, making the cost of PPA-generated electricity very expensive relative to grid electricity and thereby limiting GSA's ability to effectively utilize PPAs as a vehicle to finance increased on-site renewable generation. Increasing GSA's PPA contract authority to at least 20 years, similar to authority held by DOD, would extend the payback period for these projects, making energy prices from a wider array of PPA projects competitive with grid energy prices. This will allow GSA to significantly increase on-site renewable energy generation at Federal buildings at minimal-to-no cost to the Federal Government. Increased on-site generation will not only reduce emissions from Federal buildings, it will also provide them the ability to power critical operations in the event of grid failure, making these facilities more secure from future natural and man-made disasters.

Idea 2: Authority to grant private access to Federal electricity and electric vehicle (EV) charging infrastructure on a reimbursable basis
In June 2010, the Architect of the Capitol (AOC) issued a request to the Acting Comptroller General of the Government Accountability Office (GAO) asking for a decision on whether it could use appropriated funds to install EV charging stations for privately owned EVs of employees or Members of Congress. The AOC also asked for a decision on whether it could establish a program where employees or Members would reimburse the AOC for installing charging stations and paying the utility costs for electricity used to charge their private EVs. GAO concluded that the AOC could not use appropriated funds to install and operate EV charging stations for private use, nor could it set up a system for reimbursing the installation and operating costs for these charging stations, without explicit authorization from Congress. The AOC subsequently requested and received statutory authority (H.R. 1402 and S.739) in 2012 to install and operate charging stations at no net cost to the Federal Government. GSA has received inquiries from agencies and Federal employees about access to electrical outlets or EV charging stations. However, after conducting a legal review and discussing this matter with GAO, it is clear that GSA cannot provide private access to this infrastructure, even on a reimbursable basis, without explicit legislative authority to do so.

Idea 3: Single Federal fleet performance metric that will make it easier to assess fleet performance and optimize fleet composition
Federal fleet environmental performance is currently regulated by an array of statutory and executive requirements that make it difficult to effectively manage towards clear, uniform, and optimal environmental outcomes; create situations in which low-quality activity data is being used to report fleet performance; and make it difficult for agencies to predict the performance outcomes of fleet vehicle procurements and fleet management decisions. Clarifying Federal fleet environmental requirements and ensuring they operate in harmony will create greater overall environmental benefits while making it easier to anticipate and accurately assess the performance of the Federal fleet.[9] The consolidation of all existing fleet performance metrics into

[9] In practice, some of these requirements directly conflict with one another. As an example, Executive Order 13423 and EISA 2007, Section 142 require Federal agencies to increase their consumption of alternative fuels and EISA 2007, Section 142 and Executive

one efficiency metric, similar to the (Corporate Average Fuel Economy) CAFE standards used by the EPA to regulate auto manufacturer fuel efficiency, would be a more effective performance standard. Under such a scheme, agencies could use EPA developed vehicle fuel economies to assess the overall efficiency of their fleets. Agency-specific fleet fuel economy average targets could be set based on agency mission and requirements, and the goal of maximizing fleet average efficiency would create one metric for performance reporting. This would simplify reporting and help facilitate improved long term fleet planning. It would also allow agencies more flexibility in deciding which mix of vehicles would provide the lowest cost, highest efficiency fleet. This metric would also directly support, and could effectively replace, all executive and statutory fleet requirements/metrics except alternative fuel consumption targets.[10] In coordination with the VAM and other efforts to optimize agency fleet sizes, this would allow the government to assure fuel and GHG emission reductions with minimum reporting burden, and would make it easier for Federal agencies to plan fleet modifications with the attainment of environmental performance goals in mind.

Idea 4: Increase leasing of vehicles through GSA Fleet while reducing incentives for agencies to buy, own, and operate their own vehicles

On average, GSA leased vehicles have higher fuel economies, are newer, and are more likely to be alternative fuel vehicles than those purchased and maintained directly by Federal agencies. They also have a far lower operating cost. Despite often underreported costs of agency-owned vehicles (due to a lack of a management information system); GSA Fleet leased vehicles continue to report the lowest cost of operation. The average cost of agency owned vehicles is $0.92 per mile versus GSA Fleet leased vehicles which average $0.66 per mile. Even with the obvious cost savings of using GSA Fleet leased vehicles as reported by the agency's own data, many agencies are reluctant to use the most cost effective source. To ensure most efficient use of funds, agencies should provide analysis on their proposed leasing actions, including a comparison between costs of agency lease versus a GSA lease. The

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Order 13514 require agencies to reduce vehicle petroleum consumption. The only alternative fuel that is commercially available in quantities where agencies can meet their alternative fuel consumption requirements is E85. In an attempt to meet these requirements, federal agencies have purchased a large number of E85 vehicles. Despite efforts to optimally locate these vehicles, many of them are driven in locations where E85 is not readily available and are, therefore, forced to run on gasoline. Many E85 vehicle models are not as fuel efficient or cost effective as high fuel economy conventional vehicle models, creating a situation in which agencies are unintentionally increasing their overall petroleum consumption--detrimentally impacting their petroleum reduction performance-- as they attempt to meet their alternative fuel consumption requirements. In addition, E85 is inconsistently inventoried and billed by commercial fuel pumps, making it impossible for the federal government to obtain accurate data on the amount of E85 it is actually consuming. Thus, the federal agencies are not able to accurately report whether or not they are meeting their alternative fuel consumption goals.

[10] The other major requirements that agencies currently have to meet with respect to fleet environmental performance are reducing petroleum usage and procuring low greenhouse gas vehicles. The most effective way to reduce fleet petroleum usage at present is to improve the fuel economy of the fleet, which this measure would directly accomplish, while reducing fleet size, which is one of the major areas being targeted by the VAM. Decreasing vehicle utilization also reduces petroleum consumption, but it is not possible for agencies to effectively plan or anticipate decreased utilization because of uncertainty and volatility surrounding missions and need, e.g., national emergencies requiring significant response. Agencies are also required to procure vehicles with low greenhouse gas scores, a metric developed and calculated by the EPA, but these scores are primarily a function of vehicle fuel economy. E85 vehicles do have lower greenhouse gas scores when they are actually consuming E85; but, in practice, many of these vehicles are operating using petroleum. Thus, in practice, the score is not a reliable predictor of actual emissions reductions where the use of E85 is concerned. Commercially available electric vehicles have very high EPA-reported fuel economies--the Chevy Volt has a combined fuel economy of 98 MPG and the Nissan Leaf has a combined fuel economy of 99 MPG, so agencies would still be incentivized to buy these vehicles.

potential savings are enormous. The FAST reported operating cost difference between agency-owned and GSA leased passenger carrying vehicles exceeds $80M.[11]

Idea 5: Monetizing total value of Federal mission and assets (facilities and supply chain) and costs avoided due to implementation of climate adaptation strategies
GSA reached out to and researched the insurance, accounting, and actuary communities connected to real estate and supply chains. Across the board, these organizations—from the United Nations Environmental Program Financial Initiatives Global Roundtable to entities in U.S. corporate real estate and those working on building codes and standards—are carefully considering the upward trending costs and frequency of extreme events. Interestingly, the costs of incremental climate change and variability (e.g., persistent drought, insect infestation, human health impacts, etc.) are not readily available, perhaps due to the short time frames the investment community addresses and the adoption gap of a robust methodology for the valuation of externalities.

This is a challenge for GSA because the development of accounting standards and insurance or valuation methods are not a part of our core mission. GSA, and the Federal Government as a whole, needs information on how to monetize costs avoided (not cost savings) by investing up-front in risk management to avoid the large costs of a risk's negative effect. For example, because the Federal Government is not insured, setting a value on the avoided costs of ensuring mission continuity and securing Federal investments in a changing climate is difficult. Gathering such information is critical to measure the long-term benefits of mainstreaming climate change adaptation to GSA and the nation by reducing risk to life and property, enhancing economic vitality, promoting environmental and infrastructure sustainability, and reducing vulnerability to dynamic processes. GSA has informed CEQ and GAO that an open-source risk model and approach to monetizing the cost and payoff of risk management is needed.

Idea 6: Authority to incorporate projected climate factors into the long term planning for Federal assets (facilities and supply chain) for risk management and resiliency buttressed by an enterprise capability in geographic information systems analytic tools
Facilities - To protect the Federal investment and support mission continuity and resiliency, Federal sites and facilities need to be fit for purpose in the future climate by addressing the impacts of incremental climate change and variability for the planned lifetime of the asset -- often over 70 years. Fit for purpose means appropriate, and of a necessary standard, for its intended use. Asset planning and budget scoring do not currently address this time frame or incorporate climate factors into the asset management process. In addition, designing for the future climate will rely on professional recommendations beyond existing building code criteria and likely frustrate existing historic preservation criteria and design priorities. Inclusion of these factors is vital to ensure continuity of public services and that the initial public investment is fit for purpose and resilient over time.

Supply Chain - GSA performs acquisition activities on behalf of the Federal Government, including the establishment of Federal strategic sourcing initiatives, network services contracts, government-wide acquisition contracts, blanket purchase agreements, GSA multiple award

[11] Source: Data from FY 2012 agency reported figures 1. 156,526 total passenger carrying vehicles (civilian agencies) minus 49,936 leased from GSA equals 106,590 agency owned passenger carrying vehicles. At $0.58 per-mile vs. GSA average of $0.52 per-mile times a fleet average of 10,799 miles equals a cost difference of $69M. 2. 80,489 total passenger carrying vehicles (military agencies) minus 65,267 leased from GSA equals 15,222 military agency-owned passenger carrying vehicles. At $0.66 per-mile vs. GSA average of $0.54 per-mile times a fleet average of 8,451 miles equals a cost difference of $15M.

schedules, and the GSA Global Supply system. As a significant source of Federal supply for products and services, GSA is a key component of the Federal product and service supply chain and depends on the larger global supply chain.

Generally, GSA is vulnerable to fluctuations in demand that exceed our contractors' ability to deliver in a timely manner, as well as supply chain disruptions in manufacturing, transportation, or other capacities. Climate change could substantially increase these vulnerabilities, posing risks to the GSA mission, with cascading impacts to customer agencies. Legislation does not exist that requires companies operating in the United States to identify and address climate risks to their business operations. This is a limitation for GSA as the agency does not have the authority, nor is it part of our core mission, to require our suppliers to identify and address their climate risks. This is a complex issue that crosses government and industry and must be investigated and understood to ensure adaptive capacity in the Federal supply chain. This will require a better understanding of industry capacity in manufacturing, logistics, and other competencies critical to its ability to deliver products.

U.S. GENERAL SERVICES ADMINISTRATION
Office of Inspector General

March 29, 2013

The Honorable Sheldon Whitehouse
Chairman
Subcommittee on Oversight
SD- 410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Benjamin Cardin
Chairman
Subcommittee on Water and Wildlife
SD- 410 Dirksen Senate Office Building
Washington, DC 20510

Dear Senators,

I am in receipt of the Bicameral Task Force's letter of February 25, 2013. That letter asks my office questions related to actions by the General Services Administration (GSA) to address climate change. I appreciate the Task Force's interest and look forward to our continuing dialogue on these issues.

GSA, as the federal government's landlord and civilian procurement agency, is in a unique position to drive change across government. GSA has been charged with increasing energy efficiency, reducing greenhouse gas emissions, conserving water, reducing waste, supporting sustainable communities, and leveraging federal purchase power to promote environmentally responsible products. In our October 2012 Assessment of GSA's Major Management Challenges,[1] we identified challenges GSA faces in meeting its stated environmental goals. First, we noted that GSA needs a transparent management framework. Without a program to monitor and evaluate actual results, assessing progress in achieving GSA's sustainability goals will be difficult. Second, GSA needs to develop and adopt meaningful and balanced metrics to demonstrate economic lifecycle viability of green products and technologies. Sustainability metrics are not standardized, and reconciling the differences between multiple methodologies might prove difficult. Furthermore, GSA needs to be able to demonstrate the benefits of investing in sustainable technologies and processes by capturing accurate and complete data. Lastly, we noted that GSA has had difficulty in funding sustainability programs established to carry out its climate change goals.

With regard to the specific questions posed by the Task Force, we believe it would be appropriate to have the agency provide us with that information as an initial matter. Accordingly, we have asked GSA to provide us with the requested information for each question. We will then evaluate that information and respond to the Task Force with our assessment of GSA's progress in meeting those requirements. Until that information has been provided to my office, I write to inform the Task Force of my office's audit work on matters pertaining to environmental sustainability.

[1] Our current management challenges are included in GSA's Fiscal Year 2012 Agency Financial Report available at: http://www.gsa.gov/portal/category/104131.

At this point, our audit work on environmental issues has been largely tied to our oversight of GSA projects funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act). The Recovery Act provided GSA with a $5.55 billion appropriation, and GSA's Public Building Service (PBS) began multiple projects aimed at converting federal buildings into High-Performance Green Buildings. Our Recovery Act appropriation charged my office with overseeing and auditing GSA programs and projects funded under that Act. For instance, we audited the procurement of the air handler units, a photovoltaic roof, and a green vegetative roof at the Byrne Courthouse and Green Federal Building[2] in Philadelphia and found that the payback periods of 20.91 years for the air handler units, 61.2 years for the photovoltaic system, and 87.1 years for the vegetative roof did not represent a reasonable return on investment. Similarly, in our audit of a task order to upgrade lighting fixtures and the mechanical and electrical automation systems in the Danville Courthouse, [3] we noted our disagreement with funding a project with an estimated 103 year payback period. Additional Recovery Act project audits found, among other things, that energy conservation measures were improperly or insufficiently reviewed and approved before investments were made[4] and that no energy study had been undertaken before the procurement of lighting system upgrades for the Suitland Federal Center. [5]

We are considering expanding our audit work in this area to be more programmatic in scope as GSA makes further progress on its environmental goals. We will continue to inform the Task Force of our audit work as it relates to GSA's climate change initiatives, and we will provide GSA's account of its responsibilities and authorities as well as our assessment of the agency's progress in this area as soon as we are able.

Please feel free to contact me or (b) (6) of my staff at (b) (6) if we can answer any questions or provide further information.

Sincerely,

Brian D. Miller
Inspector General

cc: The Honorable Henry Waxman
The Honorable Edward Markey

[2] Recovery Act Report – Procurement of Design Build Air Handler Unit/Photovoltaic Roof/Green Roof Project at the Byrne Courthouse and Green Federal Building- a Limited Scope Construction Project Funded by the American Recovery and Reinvestment Act of 2009, Report Number A090184-56, April 26, 2012.

[3] Recovery Act Memorandum – Administration of Task Order Number GS-P-05-10-SC-0044 for Construction Services in Support of the American Recovery and Reinvestment Act of 2009 at the Federal Building and United States Courthouse in Danville, Illinois, Memorandum Number A090184-18, March 29, 2012.

[4] Recovery Act Memorandum—Building Systems, Building Tune-up, and Lighting System Project for Group 7 Review of PBS's Limited Scope and Small Construction Projects Funded by the American Recovery and Reinvestment Act of 2009, Audit Number A090184-39/P/R, July 5, 2011; Recovery Act Memorandum—Energy Retrofit for the Ronald Reagan Federal Office Building, International Trade Center, and Parking Garage Review of PBS's Limited Scope and Small Construction Projects Funded by the American Recovery and Reinvestment Act of 2009 Audit Number A090184-28/P/R, June 14, 2011; Recovery Act Memorandum—Design/Build Services for the Winder Building Review of PBS's Limited Scope and Small Construction Projects Funded by the American Recovery and Reinvestment Act of 2009 Audit Number A090184-47/P/R, October 27, 2011.

[5] Recovery Act Memorandum- Procurement of Lighting System Upgrades for the Suitland Federal Center—a Public Buildings Service Small Project Funded by the American Recovery and Reinvestment Act of 2009, January 5, 2011.

U.S. General Services Administration
Office of Inspector General

MEMORANDUM FOR DANIEL TANGHERLINI
ACTING ADMINISTRATOR
GENERAL SERVICES ADMINISTRATION

FROM: BRIAN D. MILLER
INSPECTOR GENERAL

DATE: March 11, 2013

SUBJECT: Congressional request for the General Services Administration's (GSA) climate change authorities

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I am in receipt of a February 25, 2013, letter from the co-chairs of the Congressional Bicameral Task Force on Climate Change. The letter (attached) asks my office to (1) identify the existing requirements in (climate change) legislation, regulation, executive orders, and other directives that apply to GSA; (2) to assess GSA's progress in meeting these requirements; and (3) to make recommendations for improving its performance in meeting these requirements. Furthermore, the letter asks for (4) my office's assessment of the authorities GSA has to reduce emissions of heat-trapping pollution; (5) make the nation more resilient to the effects of climate change; and (6) the most effective additional steps GSA could take to reduce emissions or strengthen resiliency. That letter asked for our initial response by March 29.

We believe GSA has the requested information and is in the best position to address these questions in the first instance. Accordingly, we ask that the agency provide us with the requested information for each question, so that we may evaluate that information and prepare an appropriate response. Because of the March 29 due date, we ask that you give this matter prompt attention.

Please feel free to contact me at (202) 501-0450, or have your staff contact (b) (6) at (b) (6), if you would like to discuss this further.

Attachment

U.S. GENERAL SERVICES ADMINISTRATION
Office of Inspector General

July 18, 2013

The Honorable Sheldon Whitehouse
Chairman
Subcommittee on Oversight
SD-410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Benjamin Cardin
Chairman
Subcommittee on Water and Wildlife
SD-410 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Edward Markey
216 Russell Senate Office Building
Washington, DC 20510

Dear Senators,

I am following up to my letter of March 29, 2013, in which I responded to the Bicameral Task Force's request for information on actions by the General Services Administration (GSA) to address climate change. In my March 29th letter, I indicated that my office asked GSA to provide us with the requested information, specifically to identify the existing requirements in climate change legislation, regulation, executive orders, and other directives that apply to GSA. My office has received GSA's response, and it is enclosed herein. I hope that the information provided meets your needs.

To date, our audit work on climate change has been entirely related to our monitoring of GSA's use of Recovery Act funds or GSA's public buildings and procurement functions. As I mentioned in my earlier letter, we are considering expanding our audit work in this year to be more programmatic in scope as GSA makes progress on its environmental goals. As we continue to audit and investigate instances of fraud, waste, and mismanagement in GSA's real property and acquisition activities, we will attempt to assess related climate change functions to the best of our ability. We look forward to further dialogue with the Task Force on these matters.

Please feel free to call me at 202-501-0450 or have your staff call (b) (6) at (b) (6) if we can answer any questions or provide further information.

Sincerely,

Brian D. Miller
Inspector General

Enclosure
cc: The Honorable Henry Waxman

Enclosure

June 21, 2013

MEMORANDUM FOR BRIAN D. MILLER
INSPECTOR GENERAL
OFFICE OF THE INSPECTOR GENERAL (J)

FROM: JIYOUNG C. PARK
ASSOCIATE ADMINISTRATOR
OFFICE OF SMALL BUSINESS UTILIZATION (E)

SUBJECT: Congressional Request for the General Services Administration's Climate Change Authorities

This memorandum is in response to an Inspector General memorandum dated March 11, 2013, with subject title: Congressional request for the U.S. General Services Administration (GSA) climate change authorities. GSA recognizes that the current and future impacts from climate change present one of the most serious threats to the Federal Government's ability to effectively carry out its mission, and that the Government Accountability Office has added climate change to its High Risk List. GSA is taking active steps to mitigate greenhouse gas (GHG) emissions from Federal buildings, vehicles, procurement activities, and overall operations in order to limit the Federal Government's contribution to climate change and mitigate the fiscal risks it poses.

In addition, GSA is working with other agencies to assess potential future climate impacts and identify and implement adaptation mechanisms that will insulate government facilities and operations from these impacts. GSA has made significant progress towards meeting legislative and executive mandates aimed at mitigating climate change risks. Following is a summary of GSA climate change requirements organized in two main sections. The first outlines requirements, progress, and recommendations for improvement for each major operational unit A-F. The second section outlines an assessment of current authorities and additional actions GSA could take—some of which would require new legislative authority.

Section I: Requirements, Progress, and Recommendations for Improvement 2

A. Federal Buildings.....2

B. Federal Fleet 6

C. GSA Internal Fleet.....8

D. Electronic Stewardship.....9

E. Federal Supply Chain 10

F. Climate Change Adaptation.....11

Section II: Ideas on Future Mitigation Actions that Warrant Consideration and Discussion ... 12

Section I: Requirements, Progress, and Recommendations for Improvement

GSA is meeting or exceeding most requirements. Recommendations for improving performance indicate planned work already underway in Fiscal Year (FY) 2013.

A. Federal Buildings

Scope and Authorities

The GSA Public Buildings Service (PBS) owns or leases 9,624 assets, maintains an inventory of more than 370.2 million square feet of workspace for 1.1 million Federal employees, and preserves more than 480 historic properties. GSA directly procures energy for more than 1,700 leased and owned buildings, totaling around 210 million square feet of space. In FY 2012, GSA procured more than 16.3 trillion BTUs of energy for these buildings at a cost of over $377 million; this was down from 18.8 trillion BTUs and $439 million in FY 2008, the base year of GSA's GHG inventory. GSA's current leased inventory includes 8,845 leases (totaling 196.57 million rentable square feet) within 7,331 buildings.

Requirements and Progress

- Executive Order 13514, Section 2(a) requires Federal agencies to track and reduce scope 1 and 2[1] GHG emissions from building energy consumption from a FY 2008 baseline.
    - In FY 2010, GSA established a scope 1 and 2 GHG emissions reduction target of 28.7 percent from FY 2008 levels by FY 2020. GSA exceeded its FY 2020 target in FY 2012, having achieved 36.6 percent reduction (over 828,000 metric tons of carbon dioxide equivalents) from FY 2008 levels, which is equivalent to the annual emissions from over 172,000 passenger vehicles.
    - GSA also developed and provides a free online tool, called the Carbon Footprint Tool, that Federal agencies can use to measure, track, and report their GHG

[1] GSA reports estimated emissions from GSA-owned buildings and those leases where GSA is responsible for making utility payments directly to utility providers. GSA does not report emissions from leased space where utilities are provided by the landlord and included in the lease payment. Scope 1 emissions reported are those resulting from the direct combustion of fuels on-site (heating oil and natural gas). Scope 2 emissions are those resulting the generation of energy that is purchased from a third party and delivered to GSA sites (electricity, purchased steam, purchased chilled water).

emissions in accordance with the GHG emissions inventory guidance established in response to Executive Order 13514. GSA continuously improves the functionality of the tool in response to changes in the Federal GHG emissions guidance and user recommendations. The latest change will allow users to account for GHG emissions associated with leased space.

- The Energy Independence and Security Act of 2007 (EISA 2007), Section 431 requires Federal agencies to reduce Federal building energy intensity (measured in BTU/GSF) by 30 percent from FY 2003 levels by FY 2015.
    - In FY 2012, GSA reduced energy usage per square foot by 24.5 percent from FY 2003 levels in its buildings that are subject to EISA 2007, ahead of its target of 21 percent. GSA is committed to reducing energy intensity in EISA 2007 subject buildings by 37.5 percent from FY 2003 levels by FY 2020.
    - These achievements are being made possible in large part by over 400 Recovery Act investments that are making GSA facilities more energy efficient and reducing GHG emissions.
- The Energy Policy Act of 2005 (EPAct 2005), Section 203 requires that the Federal Government's renewable electricity consumption meet or exceed three percent from FY 2007-2009, with increases to at least five percent in FY 2010-2012 and seven and a half percent in 2013 and thereafter. At least half of agency renewable energy must come from new sources.
    - In FY 2012, 20.9 percent of electricity procured or generated by GSA came from renewable sources, well ahead of the EPAct 2005 target of five percent and GSA's internal target of 14 percent.
    - Seventy of GSA's projects funded by the American Recovery and Reinvestment Act of 2009 generate renewable energy from onsite photovoltaic solar panels or wind turbines, and these are expected to produce 29 million kilowatt-hours of electricity each year.
- *Presidential Memorandum--Implementation of Energy Savings Projects and Performance-Based Contracting for Energy Savings* requires the Federal Government to enter into a minimum of $2 billion in performance-based contracts in Federal building energy efficiency within 24 months from its issuance.
    - In FY 2012, GSA initiated its Deep Energy Retrofit Program, in which it will enter into Energy Savings Performance Contracts (ESPCs) with energy service companies in order to achieve the maximum energy savings possible in 23 Federal facilities, totaling approximately 16 million square feet. These retrofits will come at no net cost to the taxpayer; rather, they are paid for through energy savings over time. The results of this challenge—to double the typical energy savings compared to typical ESPCs—will support the President's Performance Contracting Challenge, and help other agencies in their achievement of their commitments to this initiative.
    - GSA is on track to meet its requirements to award $175 million worth of projects by December 30, 2013.
- Executive Order 13514, Section 2(g) requires agencies to ensure that 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*[2] (Guiding Principles). It also requires agencies to ensure that at least 15

[2] The Guiding Principles focus on the following five topic areas for both new construction and major renovations:

1. Employ integrated design principles (new construction)/Employ integrated assessment, operation, and management principles (existing buildings)
2. Optimize energy performance

percent of their existing buildings (above 5,000 gross square feet) and building leases (above 5,000 gross square feet) meet the Guiding Principles by FY 2015 and that the agency makes annual progress toward 100-percent conformance with the Guiding Principles.

  - In FY 2012, 10.8 percent of the GSA building inventory (government-owned buildings and leased space) met the Guiding Principles, exceeding the FY 2012 target of 10 percent. GSA continues to implement processes, procedures and tools to achieve the 2013 goals and is on track to achieve 18 percent compliance with the Guiding Principles by 2015, exceeding the Executive Order 13514 (EO 13514) goal of 15 percent.
  - GSA leases incorporate over 30 mandatory green lease paragraphs aligning with Guiding Principle compliance, including requirements related to energy efficiency, systems commissioning, water conservation, and indoor air quality.

- EISA 2007, Section 433 requires that buildings be designed so that the fossil fuel-generated energy consumption of the buildings is reduced, as compared with such energy consumption by a similar building in FY 2003 (as measured by Commercial Buildings Energy Consumption Survey or Residential Energy Consumption Survey data from the Energy Information Agency), by 55 percent in FY 2010, 65 percent in FY 2015, 80 percent in FY 2020, 90 percent in FY 2025 and 100 percent in FY 2030.
  - GSA incorporated this requirement into P100, Facilities Standards for the Public Buildings Service, November 2010. Through the Office of Design and Construction's Integrated Design Review process, subject matter experts work with design teams to ensure sustainable performance is met in capital construction projects.
- Executive Order 13514, Section 2 (g) requires that agencies, beginning in 2020 and thereafter, ensure that all new Federal buildings that enter the planning process are designed to achieve zero-net-energy by 2030.
  - GSA identified three design projects in the years 2010 and 2011 to work towards net zero site energy. As funding for capital projects was limited for 2012 and 2013, GSA has been collecting best practices and case studies.
  - On February 20, 2013, GSA re-dedicated the Wayne N. Aspinall Federal Building and Courthouse in Grand Junction, CO. The original 1918 building, which is on the historic register, was enhanced to utilize original design features with modern efficient systems to be 50 percent more efficient than a typical office and produce 100 percent of its energy needs on site. Although the design decisions cannot be carbon copied, this project does prove that net zero site energy is possible on a typical budget and that it can be done in an historic structure.
- EISA 2007, Section 433 requires that sustainable design principles be applied to the sitting, design, and construction of buildings subject to the standards identified by DOE. A certification system and level for green buildings shall be identified by DOE in consultation with the Department of Defense (DOD) and GSA based on Director of Federal High-Performance Green Buildings (GSA) findings.
  - In 2000, GSA required all capital construction to achieve a LEED Silver rating; and, in 2010, GSA raised the level to Gold. As of March 4, 2013, GSA has 72 owned buildings that have achieved a LEED rating. GSA has also worked with

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3. Protect and conserve water
4. Enhance indoor environmental quality
5. Reduce environmental impact of materials

Optimizing building energy performance has a significant and direct impact on greenhouse gas emissions.

several green building rating systems to make them more useful for the Federal Government.

- Executive Order 13514, Sections 2(f) and 10, building on previous requirements under Executive Orders 12072 and 13006, require that agencies promote sustainable development by modifying agency policies to ensure that planning for new Federal facilities and lease facilities include consideration of proximity to transit and urban cores and rural town centers, and pedestrian friendliness in order to, among other reasons, reduce Scope 3 emissions associated with employee commuting.
    - GSA participated in an interagency work group with DOT, EPA, HUD, and DOD to develop Implementing Instructions for agencies to follow in rewriting and developing internal agency policies to include location efficiency in agency location decisions. Agencies are required to report on their progress to the White House Council on Environmental Quality (CEQ) and the Office of Management and Budget (OMB) in implementing these changes. These instructions were issued in September 2011.[3]
    - GSA is partnering with EPA to develop a Sustainable Locations Index that measures, among other factors, the connection times and distances via transit, of the working age population in a given region to potential Federal location. This tool should be completed by summer 2013. This tool will be one measure available for analyzing GSA's real estate inventory through the agency's GIS tools, outlined below.
    - GSA is developing a specific GIS tool, known as the Multi Asset Planning (MAP) tool, to allow agency personnel the ability to conduct quick, web-based analysis of sustainable location factors across the GSA inventory, such as proximity to transit and amenities, and walkability, and to include this analysis in complex inventory decisions. The tool is currently live and available to employees behind the firewall and will continue to be improved in coming months based on user feedback.
    - The Employee Commuter Survey portion of the GSA Carbon Footprint Tool enables agencies to conduct commuter surveys as part of their GHG emissions inventories. Twenty-four agencies currently use the commuter survey.
- EISA 2007, Section 435 prohibits Federal agencies, effective December 19, 2010, from leasing buildings that have not earned an ENERGY STAR label.
    - All leases awarded on or after December 19, 2010, require that a building have earned the Energy Star label within 12 months prior to final proposal revisions, unless the lease meets specific exceptions. Cost-effective energy efficiency and conservation improvements are still required for these exceptions. All new construction projects must achieve an Energy Star label. Nine percent of GSA's leases, representing 24 percent of total leased rentable square footage, are located within Energy Star labeled space.
- A number of statutes and Executive Orders as well as the Federal Acquisition Regulation (FAR) require agencies to advance sustainable acquisition in several areas that reduce scope 3 GHG emissions. These include, for example, requirements to purchase - and to require that our contractors purchase - products that are energy-efficient, recycled content, and non-ozone-depleting.[4]

[3] "Implementing Instructions--Sustainable Location for Federal Facilities." Council on Environmental Quality. September 15, 2011.

[4] See Section IE, Federal Supply Chain, for specific applicable authorities.

- Over the last two years, PBS has revised all national service and construction contract scope of work templates and guidance to require the use or provision by contractors of sustainable products.
- Procurement Management Reviews (PMRs), conducted on a regular basis by national office in the regions, now include sustainable product purchasing checks for PBS and will for the GSA Federal Acquisition Service (FAS) beginning this year.

Recommendations for Improving Performance

- GSA is working to estimate scope 3 GHG emissions from Federal leased space in which it does not directly pay for utilities, and will identify ways it can work with lessors to reduce GHG emissions from leased space.
- GSA has partnered with agencies on the integration of facility and data center operations, using the best in class operational and design guidelines developed by the Lawrence Berkeley National Laboratory. These have the potential to save on both facility energy costs and the energy used to operate the computer equipment. Only by designing the operations of both facility and computer operations together can substantive savings be achieved. The savings, if aggressively and comprehensively implemented can save up to 50 percent of the energy consumption of a typical data center. GSA has implemented these in two major data centers (with Agriculture and SSA) and is applying the principles in the President's Performance Contracting Challenge.
- The Green Proving Ground (GPG) program leverages GSA's real estate portfolio to demonstrate and validate emerging building technologies. Annually, the program selects a limited number of technologies or practices for evaluation based on GSA's programmatic needs. These technologies support multiple authorities described above.
  - The Department of Energy's National Laboratories performs the technical evaluation and uses the findings to support the development of GSA performance specifications and inform decision-making within GSA, other Federal agencies, and the real estate industry.
  - Since the start of the program, GPG released results for three innovative technologies that effectively reduced energy usage: a network of wireless sensors that enabled a cooling load reduction in an efficient data center; smart power strips that turn off individual plugs when they are not needed; and "occupant responsive lighting", which consists of locating lighting fixtures over individual cubicles, and using IT technology to individually control them.
  - GSA continues to select technologies to test, evaluate technologies, and facilitate deployment of proven technologies. PBS will continue work with FAS and customer agencies to identify opportunities to deploy proven technologies at scale.

B. Federal Fleet

Scope and Authorities

Federal agencies are responsible for making decisions about the number and type of vehicles they need to meet their missions. Federal guidelines for vehicle acquisition ask agencies to consider a number of factors, including agency mission, price, fuel economy, and greenhouse gas score when acquiring vehicles. Unless they are granted a waiver of procurement authority from GSA, Federal agencies are required to purchase vehicles through GSA Automotive. Alternatively, agencies may lease vehicles from GSA Fleet, or a commercial source. GSA Automotive specializes in the acquisition of vehicles, and is designated a mandatory source for vehicle purchases made by all Federal Government agencies under FPMR 101-26.501. GSA

Fleet is the second largest non-tactical Federal fleet in the U.S. government, with currently over 214,000 vehicles and 75 Federal agency customers.

Federal agencies determine when and how to dispose of vehicles at end-of-life, but GSA requires agencies to retain vehicles for a minimum number of years or miles. Agencies may dispose of vehicles no longer needed and declared excess prior to meeting one of these minimum requirements only if a vehicle needs body or mechanical repairs that exceed the fair market value of the motor vehicle. Agencies may dispose of vehicles through the exchange/sale authority, transferring them to other agencies, selling them, or donating them.

Requirements and Progress

- EISA 2007, Section 142 requires Federal agencies with 20 or more vehicles located in the U.S. to increase annual alternative fuel use 10 percent each year through FY 2015 compared to a FY 2005 baseline.
    - GSA has increased the number of available alternative fuel vehicle options: GSA offered 291 AFV options in FY 2010; 502 in FY 2011; 894 in FY 2012; and 1,532 to date in FY 2013, accounting for a 426 percent increase in AFV offerings over the four fiscal years. In FY 2012, GSA also introduced several charging stations vendors to the Automotive Super Store, Schedule 23V, for Federal agencies to utilize when purchasing electric vehicles.
- *Presidential Memorandum--Federal Fleet Performance*, requires Federal agencies to take significant steps to increase the number of alternative fuel vehicles in their fleets; procure smaller, more fuel-efficient executive vehicles; and optimize the size of their fleets using a Vehicle Allocation Methodology (VAM) developed by GSA. Furthermore, by December 31, 2015, all new light duty vehicles leased or purchased by agencies must be alternative fueled vehicles.
    - GSA developed and distributed the VAM to agencies in 2011. Agencies completed assessments of their fleets; developed optimal fleet inventory targets; and submitted fleet management plans to GSA on how they will achieve their posted targets. GSA shared these plans with OMB and CEQ and issued recommendations to agencies on how to implement their fleet plans, including recommendations on fleet right-sizing, the procurement of alternative vehicles, and vehicle sharing.
- Executive Order 13423 and EISA 2007 require Federal agencies with 20 or more vehicles to reduce fleet petroleum usage by 2 percent each year against a FY 2005 baseline out to FY 2015. Executive Order 13514 extended the sunset year for this goal out to FY 2020. Thus, GSA must reduce petroleum usage in its fleet by 30 percent from FY 2005 levels by FY 2020.
    - GSA Fleet replaced retired vehicles in the leased fleet with new, more fuel efficient vehicles, resulting in a 24 percent mile per gallon (MPG) improvement in FY 2010, a 21 percent MPG improvement in FY 2011, and a 15 percent MPG improvement in FY 2012.
    - In FY 2012, GSA launched an Electric Vehicle Program, leasing 116 electric vehicles to 21 agencies across nine cities. GSA also worked with the agencies to install charging infrastructure for these vehicles. This program ensures GSA and other Federal agencies have an opportunity to gain experience with the new technologies and introduced a vehicle option that has the potential to drastically reduce petroleum imports and GHG emissions.
- Executive Order 13514, Section 2(f) requires agencies to advance regional and local integrated planning by “participating in regional transportation planning and recognizing existing community transportation infrastructure.”

    - GSA participates in local-level transportation planning efforts—particularly the Department of Energy's (DOE) Clean Cities Program— to reduce congestion, improve access to cleaner modes of transportation, and reduce the environmental and social impacts associated with commuting.
- GSA is also supporting other efforts that will reduce GHG emissions from the Federal fleet.
    - GSA completed an intra-agency vehicle sharing pilot with the Navy. GSA is using the results of this pilot to assess the costs and benefits of vehicle sharing and examine the criteria necessary to make vehicle sharing viable for the Federal Government.

Recommendations for Improving Performance
Some of the major efforts planned or underway for FY 2013 are as follows:

- GSA will continue to educate customers on ways they can increase the fuel efficiency of the vehicles they lease from GSA and conduct meetings with customers to discuss specific methodologies they can apply to achieve desired results for their fleets.
- GSA is incorporating the VAM process into the regular annual agency Federal Automotive Statistical Tool (FAST) reporting process. Agencies will provide updated VAM optimal fleet inventory projections and fleet management plans through FAST incorporating this as an ongoing and continuous process.
- GSA will further investigate the use of vehicle sharing in the Federal Government, through the implementation of a pilot examining the viability of a GSA-developed vehicle dispatch system that can be used by agencies to manage vehicle sharing in their internal fleets and the implementation of a multi-agency vehicle sharing pilot using commercially available vehicle sharing technology.
- GSA has commenced the second phase of its Electric Vehicle Program, which intends to place an additional 200 electric vehicles, along with requisite charging infrastructure, in locations across the country.

C. GSA Internal Fleet
Scope and Authorities
The GSA internal fleet consists of 1,163 vehicles leased from GSA Fleet that are used by GSA to execute its mission.

Requirements and Progress

- Executive Order 13514, Section 2(a) requires Federal agencies to track and reduce scope 1 and 2[5] GHG emissions from fleet fuel consumption from a FY 2008 baseline.
    - In FY 2012, GSA reduced scope 1 GHG emissions from its internal fleet by 17 percent from FY 2008 levels.
- Executive Order 13423 and EISA 2007, Section 142 require Federal agencies with 20 or more vehicles to reduce fleet petroleum usage by two percent each year against a FY 2005 baseline out to FY 2015. Executive Order 13514 extended the sunset year for this goal out to FY 2020. Thus, agencies must reduce petroleum usage in their fleets by 30 percent from FY 2005 levels by FY 2020.
    - In FY 2012, GSA reduced petroleum usage within its internal fleet by 36 percent (over 200,000 gallons) from FY 2005 levels, well ahead of the EISA 2007 target of 14 percent.

[5] GSA only reports emissions resulting from the operation of vehicles owned or leased for internal use by GSA employees. GSA excludes emissions from motor vehicles that GSA leases to other Federal agencies for their use, as well as non-road vehicles.

- *Presidential Memorandum--Federal Fleet Performance*, requires Federal agencies to take significant steps to increase the number of alternative fuel vehicles in their fleets; procure smaller, more fuel-efficient executive vehicles; and optimize the size of their fleets using a Vehicle Allocation Methodology (VAM) developed by GSA. Furthermore, by December 31, 2015, all new light duty vehicles leased or purchased by agencies must be alternative fuel vehicles.
    - GSA has surveyed its internal fleet using the VAM and made reductions. As of the end of FY 2012, GSA reduced the size of its fleet from 1,217 vehicles in FY 2011 to 1,163. This is a 4.4 percent decrease in fleet size and is slightly greater than the reduction of four percent that GSA committed to in its VAM by the end of FY 2015.
    - As of the end of FY 2012, 79 percent of GSA's internal fleet vehicles were alternative fuel vehicles. GSA will continue to increase the number of alternative fuel vehicles in its internal fleet and ensure that all new light-duty vehicles procured are alternative fuel vehicles by the end of FY 2015.

D. Electronic Stewardship

Scope and Authorities

GSA, as landlord for the Federal Government, has a role in reducing the IT energy footprint in its buildings. There are more than 1,400 data centers operated by tenant agencies in space leased from GSA. The total area of these high energy consumption spaces (excluding server closets with area less than 500 square feet) comprises 3.6 million square feet. In February 2010, the Federal CIO created the Federal Data Center Consolidation Initiative (FDCCI) to reverse the growth of Federal data centers. The FDCCI seeks to curb this increase by reducing the cost of data center hardware, software, and operations; shifting IT investments to more efficient computing platforms; reducing the overall energy and real estate footprint of government data centers; and increasing IT security. GSA's Office of Citizen Services (OCSIT) and FAS supports this government-wide effort.

Requirements and Progress

- EISA 2007, Section 431 and Executive Order 13514, Section 2(a) require agencies to reduce energy intensity; and to reduce scope 1 and 2 GHG emissions, respectively[6]
    - GSA has proven an innovative technology that can be widely deployed to reduce data center energy consumption and GHG emissions. PBS GPG 2011 assessment of wireless sensor technology suggested that providing real-time, floor-to-ceiling information on humidity, air pressure and temperature conditions could enable data center operators to improve data center energy efficiency significantly, reducing in a test facility total power usage by 17 percent, saving $30,000 in energy costs per year and reducing annual GHG emissions by 542 metric tons of CO2.
- Executive Order 13514, Section 2(i) requires agencies to promote electronic stewardship by ensuring procurement preference for Electronic Product Environmental Assessment Tool- (EPEAT) registered electronic products; establishing and implementing policies to enable power management and other energy-efficient features on all eligible agency electronic products; ensuring the procurement of Energy Star and Federal Energy Management Program- (FEMP) designated electronic equipment; and implementing best management practices for energy-efficient management of servers and Federal data centers.

[6] See Section 1A Federal Buildings, which outlines how GSA is ahead of targets for meeting these requirements.

    - 100 percent of GSA's electronics acquisitions are FEMP- designated and ENERGY STAR qualified; 100 percent of GSA electronic product acquisitions are EPEAT- registered; and 100 percent of computers are power-management enabled.
    - GSA offers EPEAT-registered computers, laptops, and monitors for agencies to purchase and is adding imaging equipment and televisions registered against the new EPEAT standards, as they become available, through both schedules and the Federal Strategic Sourcing Initiative imaging equipment blanket purchase agreements.
    - In FY 2011 and FY 2012, GSA met its target of consolidating 5 of its regional data centers, and it will consolidate two additional regional data centers in FY 2013. GSA will consolidate 15 regional data centers into three by 2015. GSA has also implemented advanced sub-metering to identify energy efficiency opportunities for three data centers that will remain after consolidation.
- Presidential Memorandum on Performance-based Contracting[7]
    - GSA has established a mechanism to allow tenant agencies to, over time, pay incrementally to purchase more efficient equipment, which will help agencies reduce energy consumption and overtime utility payments for maintaining 24/7 operations.
- The Federal Data Center Consolidation Initiative requires GSA to stand up government-wide contracts to support initiative goals.
    - GSA has issued several contracts and streamlined processes to assist agencies with consolidation efforts: Infrastructure as a Service BPA – offers cloud storage, web hosting, and virtual machines; Email as a Service BPA – offers cloud email services, office automation, records management, migration and integration services; Data Center Services – offers a suite of data center services, including: Business continuity, and disaster recovery, Data center architecture, Data center operations, Data storage, hosting and warehousing; FedRAMP – promotes the Federal use of cloud computing by creating common, shared security standards.

Recommendations for Improving Performance

- GSA continues to build partnerships across its organizational units PBS, FAS, OCIO, and OCSIT, and the Federal CIO Council to fully meet these requirements and identify integrated, highest impact solutions.

E. Federal Supply Chain

Scope and Authorities

GSA offers a broad range of products and services that can assist agencies to reduce their energy use and, thereby, their GHG impacts. These include information technology solutions, telecommunications services, assisted acquisition services, travel and transportation management solutions, motor vehicles and fleet services, government purchase cards, office supplies, tools, and equipment. GSA provides Federal agencies with personal property management services to help them dispose of their excess and surplus personal property, promoting recycling and reuse, both of which reduce GHG emissions through reduced materials extraction and beneficiation.

Federal agencies have statutory and regulatory requirements to purchase certain products with environmental and energy attributes: recycled content products, Energy Star and FEMP-

[7] See Section 1A Federal Buildings, which outlines how GSA is meeting performance-based contracting requirements.

designated energy efficient products, alternative fuel vehicles and alternative fuels, biobased products, and alternatives to ozone depleting substances. GSA assists Federal agencies in meeting these requirements by offering more green products and services, and increasing sales of those products and services, but GSA does not have the ability to force or mandate agency purchasing. Agencies ultimately choose whether or not to buy goods or services with reduced environmental impacts and that result in lower GHG emissions.

Requirements and Progress

- Section 13 of Executive Order 13514 required GSA, in conjunction with the Department of Defense, the Environmental Protection Agency, and other agencies to review and provide recommendations CEQ and the Office of Federal Procurement Policy (OFPP) regarding the feasibility of introducing GHG and other vendor sustainability considerations into Federal procurements to assist Federal agencies to track and reduce their Scope 3 GHG emissions.
    - GSA convened an interagency working group that developed an initial feasibility assessment (April 2010) and more detailed recommendations (February 2013) for a path forward to integrating GHG and sustainability considerations into the Federal procurements to reduce the GHGs associated with the products commonly procured. GSA found it is feasible to do so, but that it must be accomplished in an open, deliberate, step by step process, given the significant differences in knowledge and activity between large and small vendors and between sectors. The final recommendations were submitted to CEQ and OFPP in February 2013.
- Section 104 of the Energy Policy Act of 2005 amends the National Energy Conservation Policy Act by adding Section 553, *Federal Procurement of Energy Efficient Product*s. GSA and the Defense Logistics Agency are required to clearly identify Energy Star and FEMP-designated energy efficient products. GSA and DLA also are required to supply only these products except when a purchasing agency specifies in writing that these products will not meet the purchaser's functional requirements or are not cost effective.
    - In GSA *Advantage,* agencies can use icons to identify green products, including Energy Star and FEMP-designated products, available for purchase. GSA established a process with the Energy Star program and EPEAT to receive monthly data transfers of lists of registered products for use in updating the *Advantage* listings. In addition, GSA is greening its multiple award schedules by identifying opportunities to require vendors to offer only green products, including Energy Star items. Energy Star only requirements for specific products have been added to several schedules.

Recommendations for Improving Performance

- As part of the Section 13 feasibility work, GSA and EPA's climate change program hosted a two year small business greenhouse gas pilot. The lessons learned from that pilot and other information gathered by the Section 13 Program Management Office will be used to develop educational materials for small business vendors. GSA also is piloting the use of sustainability considerations in several contracts and Federal Strategic Sourcing Initiatives to further learn what types of considerations are appropriate in different types of contract actions and where in the contracting process to apply them (e.g., market research, evaluation process, scope of work).

F. Climate Change Adaptation

Requirements and Progress

- Section 8(i) of Executive Order 13514 requires Federal agencies to evaluate agency climate-change risks and vulnerabilities to manage the effects of climate change on the agency's operations and mission in both the short and long term. Additionally, CEQ issued a set of Implementing Instructions for Federal Agency Adaptation Planning. The Instructions inform agencies on how to integrate climate change adaptation into their planning, operations, policies, and programs, as recommended by the Interagency Climate Change Adaptation Task Force in its October 2010 Progress Report to the President. GSA has and continues to assess the vulnerabilities of the agency's assets, including facilities and the supply chain.

  The Federal Property and Administrative Services Act of 1949, as amended, (Sec.210) requires the GSA to maintain and protect property. Climate adaptation planning is a prudent risk management practice for long term maintenance and protection of real property, and GSA's work in this area is designed to assess and mitigate risks to the long-term use of the real property for its use in supporting the missions of the agencies occupying and using the property.
  - GSA completed its Climate Change Adaptation Action Plan[8] and submitted the FY 2013 action plan with the FY 2012 Sustainability Plan. The action plan outlines important actions that GSA has taken to date and actions that GSA will undertake in FY 2013 to better understand and address the risks and opportunities brought on by climate change. In FY 2011, GSA completed a high level climate vulnerability assessment followed by with a series of FY12 climate change adaptation priority actions. In FY 2013, GSA is working to integrate adaptation into key business processes and documents; begin planning and training sessions that will help GSA better serve its customers with respect to climate change risk management; repeat and expand two regional pilots assessing projected climate change risks and adaptation priorities; assess demand and supply for climate science and adaptation service offerings to assist agencies with adaptation planning and risk management; and work with other agencies to continue to advance planning tools and actionable science.

Recommendations for Improving Performance

- As part of GSA's FY 2012 and 2013 adaptation activities, the agency conducted regional climate change adaptation planning scenario sessions with FAS and PBS staff in Regions 6 (Kansas City, MO) and 11 (National Capital Region). The Region 11 session, known as the National Capital Region Climate Risks Preparation and Adaptation Pilot, was selected in February 2013 by CEQ as one of six GreenGov Spotlight Communities. This program highlights the collaborative efforts of multiple Federal partners that are helping the Federal Government achieve the energy and sustainability goals and targets in Executive Order 13514. Through the remainder of FY 2013, GSA will participate in the GreenGov Spotlight Community to share its successes and challenges in implementing the pilot in an effort to assist other Federal agencies in replicating similar adaptation actions across the country.

Section II: Ideas on Future Mitigation Actions that Warrant Consideration and Discussion

This section details a number of ideas on additional actions and new authorities that would allow GSA to further reduce federal greenhouse gas emissions. These ideas warrant further

[8] The GSA Climate Adaptation Action Plan is available at: http://www.gsa.gov/portal/getMediaData?mediaId=162947

examination and discussion as the Federal Government identifies new ways to mitigate GHG emissions.

Idea 1: Long term on-site renewable power purchase agreement (PPA) authority
PPAs are a renewable energy investment vehicle in which a private entity purchases, installs, owns, operates and maintains customer-sited renewable equipment in exchange for the customer agreeing to purchase power from the installed equipment. FAR Part 41 Utility Services provides GSA with the ability to delegate the authority to enter into a PPA contract of up to 10 years. A 10-year PPA contract period severely limits the payback period for the generation investment, making the cost of PPA-generated electricity very expensive relative to grid electricity and thereby limiting GSA's ability to effectively utilize PPAs as a vehicle to finance increased on-site renewable generation. Increasing GSA's PPA contract authority to at least 20 years, similar to authority held by DOD, would extend the payback period for these projects, making energy prices from a wider array of PPA projects competitive with grid energy prices. This will allow GSA to significantly increase on-site renewable energy generation at Federal buildings at minimal-to-no cost to the Federal Government. Increased on-site generation will not only reduce emissions from Federal buildings, it will also provide them the ability to power critical operations in the event of grid failure, making these facilities more secure from future natural and man-made disasters.

Idea 2: Authority to grant private access to Federal electricity and electric vehicle (EV) charging infrastructure on a reimbursable basis
In June 2010, the Architect of the Capitol (AOC) issued a request to the Acting Comptroller General of the Government Accountability Office (GAO) asking for a decision on whether it could use appropriated funds to install EV charging stations for privately owned EVs of employees or Members of Congress. The AOC also asked for a decision on whether it could establish a program where employees or Members would reimburse the AOC for installing charging stations and paying the utility costs for electricity used to charge their private EVs. GAO concluded that the AOC could not use appropriated funds to install and operate EV charging stations for private use, nor could it set up a system for reimbursing the installation and operating costs for these charging stations, without explicit authorization from Congress. The AOC subsequently requested and received statutory authority (H.R. 1402 and S.739) in 2012 to install and operate charging stations at no net cost to the Federal Government. GSA has received inquiries from agencies and Federal employees about access to electrical outlets or EV charging stations. However, after conducting a legal review and discussing this matter with GAO, it is clear that GSA cannot provide private access to this infrastructure, even on a reimbursable basis, without explicit legislative authority to do so.

Idea 3: Single Federal fleet performance metric that will make it easier to assess fleet performance and optimize fleet composition
Federal fleet environmental performance is currently regulated by an array of statutory and executive requirements that make it difficult to effectively manage towards clear, uniform, and optimal environmental outcomes; create situations in which low-quality activity data is being used to report fleet performance; and make it difficult for agencies to predict the performance outcomes of fleet vehicle procurements and fleet management decisions. Clarifying Federal fleet environmental requirements and ensuring they operate in harmony will create greater overall environmental benefits while making it easier to anticipate and accurately assess the performance of the Federal fleet.[9] The consolidation of all existing fleet performance metrics into

[9] In practice, some of these requirements directly conflict with one another. As an example, Executive Order 13423 and EISA 2007, Section 142 require Federal agencies to increase their consumption of alternative fuels and EISA 2007, Section 142 and Executive

one efficiency metric, similar to the (Corporate Average Fuel Economy) CAFE standards used by the EPA to regulate auto manufacturer fuel efficiency, would be a more effective performance standard. Under such a scheme, agencies could use EPA developed vehicle fuel economies to assess the overall efficiency of their fleets. Agency-specific fleet fuel economy average targets could be set based on agency mission and requirements, and the goal of maximizing fleet average efficiency would create one metric for performance reporting. This would simplify reporting and help facilitate improved long term fleet planning. It would also allow agencies more flexibility in deciding which mix of vehicles would provide the lowest cost, highest efficiency fleet. This metric would also directly support, and could effectively replace, all executive and statutory fleet requirements/metrics except alternative fuel consumption targets.[10] In coordination with the VAM and other efforts to optimize agency fleet sizes, this would allow the government to assure fuel and GHG emission reductions with minimum reporting burden, and would make it easier for Federal agencies to plan fleet modifications with the attainment of environmental performance goals in mind.

Idea 4: Increase leasing of vehicles through GSA Fleet while reducing incentives for agencies to buy, own, and operate their own vehicles

On average, GSA leased vehicles have higher fuel economies, are newer, and are more likely to be alternative fuel vehicles than those purchased and maintained directly by Federal agencies. They also have a far lower operating cost. Despite often underreported costs of agency-owned vehicles (due to a lack of a management information system); GSA Fleet leased vehicles continue to report the lowest cost of operation. The average cost of agency owned vehicles is $0.92 per mile versus GSA Fleet leased vehicles which average $0.66 per mile. Even with the obvious cost savings of using GSA Fleet leased vehicles as reported by the agency's own data, many agencies are reluctant to use the most cost effective source. To ensure most efficient use of funds, agencies should provide analysis on their proposed leasing actions, including a comparison between costs of agency lease versus a GSA lease. The

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Order 13514 require agencies to reduce vehicle petroleum consumption. The only alternative fuel that is commercially available in quantities where agencies can meet their alternative fuel consumption requirements is E85. In an attempt to meet these requirements, federal agencies have purchased a large number of E85 vehicles. Despite efforts to optimally locate these vehicles, many of them are driven in locations where E85 is not readily available and are, therefore, forced to run on gasoline. Many E85 vehicle models are not as fuel efficient or cost effective as high fuel economy conventional vehicle models, creating a situation in which agencies are unintentionally increasing their overall petroleum consumption--detrimentally impacting their petroleum reduction performance-- as they attempt to meet their alternative fuel consumption requirements. In addition, E85 is inconsistently inventoried and billed by commercial fuel pumps, making it impossible for the federal government to obtain accurate data on the amount of E85 it is actually consuming. Thus, the federal agencies are not able to accurately report whether or not they are meeting their alternative fuel consumption goals.

[10] The other major requirements that agencies currently have to meet with respect to fleet environmental performance are reducing petroleum usage and procuring low greenhouse gas vehicles. The most effective way to reduce fleet petroleum usage at present is to improve the fuel economy of the fleet, which this measure would directly accomplish, while reducing fleet size, which is one of the major areas being targeted by the VAM. Decreasing vehicle utilization also reduces petroleum consumption, but it is not possible for agencies to effectively plan or anticipate decreased utilization because of uncertainty and volatility surrounding missions and need, e.g., national emergencies requiring significant response. Agencies are also required to procure vehicles with low greenhouse gas scores, a metric developed and calculated by the EPA, but these scores are primarily a function of vehicle fuel economy. E85 vehicles do have lower greenhouse gas scores when they are actually consuming E85; but, in practice, many of these vehicles are operating using petroleum. Thus, in practice, the score is not a reliable predictor of actual emissions reductions where the use of E85 is concerned. Commercially available electric vehicles have very high EPA-reported fuel economies--the Chevy Volt has a combined fuel economy of 98 MPG and the Nissan Leaf has a combined fuel economy of 99 MPG, so agencies would still be incentivized to buy these vehicles.

potential savings are enormous. The FAST reported operating cost difference between agency-owned and GSA leased passenger carrying vehicles exceeds $80M.[11]

Idea 5: Monetizing total value of Federal mission and assets (facilities and supply chain) and costs avoided due to implementation of climate adaptation strategies
GSA reached out to and researched the insurance, accounting, and actuary communities connected to real estate and supply chains. Across the board, these organizations—from the United Nations Environmental Program Financial Initiatives Global Roundtable to entities in U.S. corporate real estate and those working on building codes and standards—are carefully considering the upward trending costs and frequency of extreme events. Interestingly, the costs of incremental climate change and variability (e.g., persistent drought, insect infestation, human health impacts, etc.) are not readily available, perhaps due to the short time frames the investment community addresses and the adoption gap of a robust methodology for the valuation of externalities.

This is a challenge for GSA because the development of accounting standards and insurance or valuation methods are not a part of our core mission. GSA, and the Federal Government as a whole, needs information on how to monetize costs avoided (not cost savings) by investing up-front in risk management to avoid the large costs of a risk's negative effect. For example, because the Federal Government is not insured, setting a value on the avoided costs of ensuring mission continuity and securing Federal investments in a changing climate is difficult. Gathering such information is critical to measure the long-term benefits of mainstreaming climate change adaptation to GSA and the nation by reducing risk to life and property, enhancing economic vitality, promoting environmental and infrastructure sustainability, and reducing vulnerability to dynamic processes. GSA has informed CEQ and GAO that an open-source risk model and approach to monetizing the cost and payoff of risk management is needed.

Idea 6: Authority to incorporate projected climate factors into the long term planning for Federal assets (facilities and supply chain) for risk management and resiliency buttressed by an enterprise capability in geographic information systems analytic tools
Facilities - To protect the Federal investment and support mission continuity and resiliency, Federal sites and facilities need to be fit for purpose in the future climate by addressing the impacts of incremental climate change and variability for the planned lifetime of the asset -- often over 70 years. Fit for purpose means appropriate, and of a necessary standard, for its intended use. Asset planning and budget scoring do not currently address this time frame or incorporate climate factors into the asset management process. In addition, designing for the future climate will rely on professional recommendations beyond existing building code criteria and likely frustrate existing historic preservation criteria and design priorities. Inclusion of these factors is vital to ensure continuity of public services and that the initial public investment is fit for purpose and resilient over time.

Supply Chain - GSA performs acquisition activities on behalf of the Federal Government, including the establishment of Federal strategic sourcing initiatives, network services contracts, government-wide acquisition contracts, blanket purchase agreements, GSA multiple award

[11] Source: Data from FY 2012 agency reported figures 1. 156,526 total passenger carrying vehicles (civilian agencies) minus 49,936 leased from GSA equals 106,590 agency owned passenger carrying vehicles. At $0.58 per-mile vs. GSA average of $0.52 per-mile times a fleet average of 10,799 miles equals a cost difference of $69M. 2. 80,489 total passenger carrying vehicles (military agencies) minus 65,267 leased from GSA equals 15,222 military agency-owned passenger carrying vehicles. At $0.66 per-mile vs. GSA average of $0.54 per-mile times a fleet average of 8,451 miles equals a cost difference of $15M.

schedules, and the GSA Global Supply system. As a significant source of Federal supply for products and services, GSA is a key component of the Federal product and service supply chain and depends on the larger global supply chain.

Generally, GSA is vulnerable to fluctuations in demand that exceed our contractors' ability to deliver in a timely manner, as well as supply chain disruptions in manufacturing, transportation, or other capacities. Climate change could substantially increase these vulnerabilities, posing risks to the GSA mission, with cascading impacts to customer agencies. Legislation does not exist that requires companies operating in the United States to identify and address climate risks to their business operations. This is a limitation for GSA as the agency does not have the authority, nor is it part of our core mission, to require our suppliers to identify and address their climate risks. This is a complex issue that crosses government and industry and must be investigated and understood to ensure adaptive capacity in the Federal supply chain. This will require a better understanding of industry capacity in manufacturing, logistics, and other competencies critical to its ability to deliver products.