Strategic Sustainability Performance Plan

US Department of Health and Human Services

2011

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I: Agency Policy Statement

U.S. Department of Health and Human Services (HHS) Sustainability and Climate Change Adaptation Policy Statement

June 3, 2011

When President Obama signed Executive Order 13514 on October 5, 2009, he committed the federal government to take a leadership role in promoting sustainability and responding to climate change. Actions called for in the order, such as reducing greenhouse gas emissions and conserving water and other resources, will help build a clean energy economy and contribute to mitigating climate change. The order also requires each federal agency to evaluate risks and vulnerabilities associated with both short-and long-term effects of climate change on its ability to carry out its mission.

A number of scientific panels, including the U.S. Global Change Research Program, and International Panel on Climate Change, have published data indicating that climate change is already negatively affecting human health in the United States, and is likely to continue impacting human health in the future. Hazards linked to climate change include increases in the frequency and severity of heat waves, droughts, wildfires, heavy rainfall, and flooding; changes in rates and ranges of infectious and allergic diseases; and threats to communities from rising sea levels and coastal erosion. Although climate change may reduce certain health risks, most likely it will worsen many existing health threats, as well as introduce new ones. Individuals and communities with underlying vulnerabilities that contribute to poor health, such as poverty, being very young or old, having pre-existing health (including behavioral health) conditions, and living in vulnerable geographic areas will be the most at risk of harm. HHS's responsibility is to protect the health of all Americans and provide essential human services, especially for those who are least able to help themselves. As such, our Department has dual critical roles to play in reducing our own environmental impact while facilitating understanding of and adapting to climate change. Through these actions, we will set the example of responsible stewardship and improve individual and community resilience, supporting a healthier future for the American people.

At HHS, we understand the importance of sustainable, climate-resilient communities. We know that we must take a lead role in ensuring that our own facilities and operations set an example for sustainability. We commit to continued compliance with all environmental, energy, and public health statutes, regulations, and Executive Orders. We will also set the standard for federal agencies in sustainable development, provide climate-resilient health and human services, and support scientific research focused on environmental and public health, including research on the effects of climate change on human health and well-being. Our Department will adopt the Interagency Climate Change Adaptation Task Force guiding principles to integrate climate

change adaptation and mitigation strategies into our sustainability and health programs, policies, and operations.

In the coming year, HHS will identify how climate change may impact our Department's ability to carry out its mission, programs, policies, and operations, as well as to determine how we should prepare for and respond to a changing climate. Our plan will focus on ensuring sustainability by integrating climate change and environmental impact considerations into internal management functions and policies; by collecting, analyzing, and utilizing state of the science data; and by enhancing issue awareness and specialty training for our employees. As part of this plan, we will identify and prioritize actions to respond to climate change, and will establish mechanisms for evaluating our ongoing capacity to effectively adapt to current and future changes in the climate. We will leverage HHS regional and preparedness programs and existing healthy community and climate change initiatives to complement and build upon our Strategic Sustainability Performance Plan and enhance collaboration with other federal agencies, State, Local, and Tribal governments.

HHS will continue instilling sustainable practices throughout our programs and operations as we respond to the new challenge of adapting to climate change as we continue to fulfill our mission. Through our past accomplishments and future commitments, the Department of Health and Human Services will lead the way toward a healthy future for all Americans.

Kathleen Sebelius
Secretary, U.S. Department of Health and Human Services

II. Sustainability and the Agency Mission

Sustainability is integral to the HHS mission, which is to protect the health of all Americans and provide essential human services, especially for those who are least able to help themselves. Sustainability has been defined as "the enduring prosperity of all living things." By this measure, sustainability is directly linked to the health of humans, the health of the environment, and the health of economic systems that support and promote our well-being. This triple health bottom line – human health, environmental health and economic health – is integral to HHS's mission and the sustainability mandates of Executive Order (EO) 13514.

The Department's mission activities are carried out by a large number of employees in numerous facilities across the U.S. and abroad. The unique character of HHS is reflected in the types of buildings we occupy. Office buildings comprise less than 36% of total gross square footage, with the balance housed in laboratories and hospitals (34% and 8%, respectively), family housing (7%), warehouses (4%), and other (11%).

Statistics summarizing the size and scope of these operations are presented below in Table 1 and reflect FY2010 numbers.

Table 1: US Department of Health and Human Services at a Glance

Total # Federal Employees	83,745
Total Acres Land Managed	6,829.98
Total # Facilities Owned	2,980
Total # Facilities Leased (GSA lease)	736
Total # Facilities Leased (Non-GSA)	267
Total Facility Gross Square Feet (GSF)	51,864,431
Operates in # of Locations throughout U.S.	1,240
Operates in # of Locations outside of U.S.	12
Total # Fleet Vehicles Owned	795
Total # Fleet Vehicles Leased	2930
Total # Exempted-Fleet Vehicles (from Alternative fuel only) (Tactical, Emergency, Etc.)	1,936
Total Operating Budget FY 2010 ($MIL)	854,174
Total # Contracts Awarded FY 2010 (new contracts and modifications)	81,152
Total Amount Contracts Awarded FY 2010 ($MIL)	$18,600
Total Amount Spent on Energy Consumption FY 2010 ($MIL)	167.5
Total MBTU Consumed per GSF	272.3
Total Gallons of Water Consumed per GSF	60.8
Total Scope 1&2 GHG Emissions (Comprehensive) FY 2008 Baseline MMTCO2e	0.96
Total Scope 1&2 GHG Emissions (Subject to Agency Scope 1&2 Reduction Target) FY 2008 Baseline MMTCO2e	0.96
Total Scope 3 GHG Emissions (Comprehensive) FY 2008 Baseline MMTCO2e	0.29
Total Scope 3 GHG Emissions (Subject to Agency Scope 3 Reduction Target) FY 2008 Baseline MMTCO2e	0.29

While much of the sustainability efforts in this plan will focus on these operations, HHS must assume a leadership role in concurrently promoting both sustainability and health throughout the Federal government. Just as the Department of Energy (DOE) leads initiatives relating to energy reduction, HHS will lead initiatives relating to health and well-being.

In 2010, HHS began to evaluate relationships between the sustainability mandates of EO 13514 and its mission priorities of improving the national performance of leading health indicators and healthcare outcomes. Based in this evaluation it formulated goals intended to meet the mandates and maximize synergistic relationships with mission programs. In early 2011, HHS conducted a more in depth review of sustainability-mission relationships by comparing the specific sustainability goals of its 2010 sustainability plan and the new health and human service objectives set for the Department in the Secretary's Strategic Plan for Fiscal Years 2010 – 2015 http://www.hhs.gov/secretary/about/priorities/priorities.html. The review revealed positive synergistic relationships between virtually all of the sustainability goals and mission objectives and numerous opportunities for integration and leveraging resources and efforts for achievement of common objectives. The results of this review are provided in this crosswalk document (http://www.hhs.gov/strategic_plan/strategic_plan_crosswalk.pdf). This is meant as a "living" document, to be used as key component of guidance for integrating sustainability mission objectives and applying them to support the primary mission activities of HHS.

Mission-Related Challenges and Actions Taken to Address Them

The review of relationships between general sustainability goals and mission priorities revealed no mission related conflicts or challenges. However, potential conflicts and challenges have become apparent as specific aspects of goal implementation strategies are developed. In most cases these are identified by subject matter experts in the various goal centric working groups of the HHS Sustainability Task Force. These experts then recommend courses of action to address them, which may include changes in policies, funding priorities, research and development and solicitations for innovation projects. Examples of these conflicts and how they are being addressed are described below.

Inappropriate Application of Value Engineering Techniques to Sustainable Building Goals
The goal of value engineering (VE) in planning and designing facilities is to get the "Best Value" for the government, while economically supporting mission activities. Often, however, it is simply used as a way to cut costs. As a result, building features that are not perceived as directly related to program activities (such as energy conservation equipment which may initially increase costs, yet result in long-term, lifecycle savings) are cut without understanding the impacts on sustainability and mission-related goals. In response to this problem, a Sustainable Buildings Work Group team, led by the Indian Health Service, reviewed the existing VE policy in the HHS Faculties Program Manual and proposed new policy and procedures that require VE assessments to be based primarily on life cycle costs. This enhanced VE Policy addresses the basic conflict with sustainable building design goals by defining sustainable design features as:

> "Aspects of the design including material selection, systems, selection, or construction process intended to comply with Federal sustainability requirements or to achieve certification through a third-party sustainability rating system. Sustainable design

features support the Department's Mission "to protect the health of all Americans and provide essential human services, especially for those who are least able to help themselves." Contained in the HHS Strategic Sustainability Performance Plan are specific Departmental goals for sustainability."

The new policy also specifically prohibits the deletion of sustainability features and performance standards that are required to meet goals set by this Plan. The new VE Section 3-8 is available at this link.

Energy Conservation Challenges of Specialized Facilities. A significant percentage of HHS mission activities are performed in laboratories and hospitals, which require significantly higher amounts of energy than do more conventional building types, such as offices. Typically, high-energy consuming systems include high air turnover requirements to meet existing health and safety standards, and specialized laboratory and health care equipment process loads.

In response to this challenge, studies are planned to evaluate current health and safety standards and determine if modifications, such as reducing air change requirements for greater energy efficiency, can be made without adversely impacting health, safety and product protection needs. HHS is actively collaborating with several organizations, including the Energy Star Program, Laboratories for the 21st Century (Labs21), universities and other stakeholders to develop more energy efficient equipment, laboratory designs, processes, and operation and maintenance procedures for laboratories and hospitals.

Lack of Metrics for Measuring and Incorporating Health Impact Costs and Benefits in Return on Investment Calculations. Sustainable building goals, particularly improvements in Indoor Environmental Quality (IEQ), have been shown to significantly reduce health care costs and absenteeism, and to improve the productivity of building occupants. Limited research suggests that the return on IEQ investments greatly exceed that from all other improvements combined. However, application of these findings is hampered by limited research and a lack of methods and metrics for comparing the health and productivity performance of buildings and building features.

As part of our effort to address this challenge, HHS has initiated the Health in Buildings Roundtable (HiBR), an interdisciplinary group of subject matter experts from Federal agencies, academia, professional societies, the U.S. Green Building Council and the private sector to determine research needs; promote basic, applied and translational research on health in the built environment; and serve as a clearinghouse for health information.

III. Greenhouse Gas Reduction Goals

The current HHS emissions reduction strategy includes projects and programs anticipated to meet the 2020 targets. These fall into two general categories - infrastructure (i.e., mostly energy efficiency) and behavior (i.e., encourage individuals to conserve energy). The current projects and programs have been evaluated for Greenhouse Gas (GHG) emissions reduction potential as well as fiscal feasibility. HHS will focus on energy efficiency projects discussed in detail in Section II of the Strategic Sustainability Performance Plan (SSPP). Behavioral strategies include a variety of programs aimed at changing the way the HHS employees travel, use electricity at work, manage assets, and dispose of waste. Transportation initiatives focus on programs and alternatives that reduce fuel usage by the fleet, commuters, and the business air and ground traveler.

American Recovery and Reinvestment Act (ARRA) investment funds were used to complete a total of nine major construction projects with the intent of improving energy efficiency and incorporating some sustainable features. Of the nine construction projects, six plan to meet or exceed the Guiding Principles and achieve third party verification. In addition, ARRA funds were used for a total of 318 repair, maintenance and improvement projects, 71 of which were specifically identified as energy conservation or sustainability projects. HHS anticipates that these projects will reduce GHG emissions. Because the majority of these projects are scheduled for completion at the end of FY2012, the full impact of the investments will not be realized until FY2013 and beyond. A detailed discussion of goals and milestones will be included in Section II of this plan.

IV. Plan Implementation

Continuous communication will be critical to successful implementation of Executive Order 13514. Identifying short-term, intermediate and long-term milestones and metrics, and putting in place the management and oversight tools to track and steer efforts will be vital. The biggest challenge in plan implementation will be to balance other agency priorities.

A - B. Internal Coordination and Communication/Coordination and Dissemination of the Plan to the Field

Responsible Office: Assistant Secretary for Administration
Key Internal Partners: Assistant Secretary for Public Affairs, and all HHS Divisions

HHS elected to merge these discussion items together, as part of our implementation strategy involves better integration and communication with ALL of our HHS employees, including those in the field.

In the past, the Department's approach to sustainability has been decentralized, with Operating Divisions (OPDIV) and Staff Divisions (STAFFDIV) individually determining how to achieve their goals. In March 2010, HHS established a task force and various working groups which are engaged regularly to drive the initiative.

Given the link between sustainability and the Department's achievement of its health mission, it is critically important for HHS to be a trailblazer and leader within the government community. In recognizing that oversight and leadership are critical for establishing, implementing and evaluating an integrated Departmental strategy, HHS still looks to create a centralized sustainability office team that will:

- Be a champion for sustainability, serving as an organizational strategist to ensure widespread adoption of sustainable practices throughout HHS in an accountable manner;
- Support the Senior Sustainability Officer by providing one voice for HHS on sustainability to the White House environmental offices, the media, Congress, other agencies, and private entities;
- Coordinate implementation of sustainability initiatives in a fair manner across HHS and communicate the Sustainability Plan and progress to employees and the public; and
- Identify best practices and benchmarks, spearheading automated HHS-wide data collection / inquiry / evaluation.

C. Leadership and Accountability

Responsible Office: Assistant Secretary for Administration (ASA)

Key Internal Partners: All HHS divisions

This HHS Strategic Sustainability Performance Plan establishes the link between health and sustainability and demonstrates the commitment of HHS leadership to embrace sustainability as a continuous area of focus integral to the Department's mission. As discussed in Section IV, A and B, HHS intends to provide oversight through a centralized sustainability office. In the

interim, the initiative is being lead by the ASA/Office for Facilities Management and Policy with heavy reliance on the operating divisions. Each operating division has designated a sustainability champion, or Chief Sustainability Officer (CSO). The operating division CSOs not only lead their own division's sustainability efforts, but work with key staff division policy owners on an interagency task force that meets regularly under the direction of the Senior Sustainability Officer. This team leads the Department in the following critical sustainability activities:

1. *Team Development* – Promote a cross-functional, enterprise-wide approach to sustainability and facilitate interdisciplinary coordination in all decision-making. Foster required sustainability training and disciplinary cross-training between sectors including health scientists, health care professionals, engineers, planners, architects, accountants, communications specialists, business analysts, etc. Establish resources, data sharing and credit-sharing practices that promote communication and collaboration across functional areas and agencies. Establish incentives and recognition for teams of multi-disciplinary professionals to work together towards large-scale multifaceted goals.
2. *Advanced Science and Technology* – Ensure data reporting protocols, goal tracking, and communication tools such as dashboards and wikis are used to promote sustainability data sharing. Define products, actions, environments, systems and protocols that embody the health and sustainability attributes of the triple bottom line -- human health, environmental health and economic health. Publish best practices and scientific articles on links between health and sustainability. Establish linkages between sustainability and health objectives into new and existing activities (e.g., Global Change Research Program (USGCRP); Healthy People 2020; HHS Climate Change and Health Working Group, the Trans-National Institutes of Health (NIH) Working Group on Climate and Health, and other related workgroups).
3. *Policy* – Oversee a comprehensive policy review and work collaboratively across the Department to implement enhancements that promote sustainability. Consider all levels of policy including internal and industry standard operating procedures, research and patient treatment protocols, federal regulatory framework, licensing and inspection procedures, rulemaking, grant guidance, partner agreements, contracts, procurement mechanisms, general accounting principles and other guidance. Foster the revision of and influence policy to incorporate health impacts that reflect a long term, life-cycle cost approach to decision making.
4. *Physical Environment* – Lead the evaluation of all physical attributes of HHS facilities, campuses, leases, transportation systems and energy generation equipment, and establish a plan for integrating physical systems that promote health and wellness, environmental health and economic health. Encourage the use of strategies such as evidence-based design and healthy community design to improve the physical systems within which we work and live.
5. *Culture/Behavior Change* – Foster education and training, and promote opportunities for engagement of staff, contractors, partners, grantees, patients, industry, neighbors and the larger community. Establish performance management elements and other incentives for positive and negative sustainability and health impacts, cascaded from the Senior Executive Service-level throughout the enterprise. Include language in all performance plans to

address sustainability requirements. Create enforcement mechanisms for policies and provide support to help partners remove barriers that may block progress.

D. Agency Policy and Planning Integration

Responsible Office: Assistant Secretary for Administration

Key Internal Partners: All HHS divisions

The following Critical Planning Coordination Table identifies existing HHS reports, plans, and policy documents in which sustainability requirements may be integrated.

Table 2: Critical Planning Coordination

Operating Report / Plan	Scope 1 & 2 GHG Reduction	Scope 3 GHG Reduction	Develop and Maintain Agency Comprehensive GHG Inventory	High-Performance Sustainable Design / Green Buildings	Regional and Local Planning	Water Use Efficiency and Management	Pollution Prevention and Waste Elimination	Sustainable Acquisition	Electronic Stewardship and Data Centers	Agency Specific Innovation	Instructions for Implementing Climate Change Adaptation Planning
HHS Strategic Plan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Government Performance Results Act (GPRA) Strategic Plan	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes
Grant Policy	n/a	n/a	n/a	Yes	Yes	n/a	n/a	n/a	Yes	n/a	Yes
Agency Capital Plan	Yes	n/a	n/a	Yes	Yes	Yes	Yes	Yes	n/a	n/a	Yes
Circular A-11 Sections: 300s (Buildings)	Yes	n/a	n/a	Yes	Yes	Yes	Yes	Yes	n/a	n/a	Yes
Annual Energy Data Report	Yes	No	Yes	n/a	n/a	Yes	n/a	n/a	Yes	n/a	No
Energy Independence and Security Act (EISA) Section 432 Facility Evaluations / Project Reporting	Yes	n/a	n/a	Yes	n/a	Yes	n/a	n/a	n/a	n/a	Yes
Budget (FY11)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes
HHS Real Property Asset Management Program (RAMP)	No	No	n/a	Yes	Yes	Yes	Yes	No	n/a	n/a	Yes
Circular A-11 Exhibit 53s	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes
OMB Scorecards	Yes	Yes	Yes	Yes	n/a	Yes	Yes	Yes	Yes	n/a	Yes
DOE's Annual Federal Fleet Report to Congress and the President[2]	Yes	n/a	Yes	n/a	Yes	n/a	n/a	Yes	n/a	Yes	Yes
Data Center Consolidation Plan	Yes	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a	Yes
Environmental Management System3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes
Sustainable Building Implementation Plan (SBIP)	Yes	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes	n/a	Yes
Affirmative Procurement Plan (APP)	Yes	No	No	Yes	n/a	n/a	Yes	Yes	Yes	n/a	Yes
Electronic Stewardship Plan (ESP)	Yes	Yes	No	Yes	Yes	n/a	Yes	Yes	Yes	n/a	Yes

[1] Agencies should remove plans/reports that they currently are not required to complete and add any additional relevant plans/reports not currently included in the table.
[2] Energy Policy Act of 2005 (EPAct)
[3] Agencies that have a Compliance Management Plan rather than an Environmental Management System should modify the table accordingly.
[4] Sustainable Buildings Implementation Plans, Sustainable Procurement (also known as Green or Affirmative Procurement, or Green Purchasing), Electronic Stewardship Plans, Chemical Reduction Plans, Pollution Prevention Plans, Compliance Management Plans, etc.

E. Agency Budget Integration

Responsible Office: Assistant Secretary for Financial Resources

Key Internal Partners: All HHS divisions

HHS has incorporated sustainability efforts into its annual budget submission via a section specifically addressing sustainability programs, efforts and/or initiatives. The integration between this Sustainability Plan, the HHS Strategic Plan, and the Department's performance budget submission will crystallize as we continue to educate and empower employees on the sustainability initiative.

F. Methods for Evaluation of Progress

Responsible Office: Assistant Secretary for Administration

Key Internal Partners: All HHS divisions

Each of the goal areas in this Plan is accompanied by specific milestones and metrics that will be used to evaluate progress moving forward. The planned centralized sustainability office will coordinate with HHS Operating Divisions to collect information and to evaluate progress on an ongoing basis. In the interim, each Operating Division will be responsible for individually meeting the goals established in this plan and reporting progress to the ASA/Office for Facilities Management and Policy for compilation. Continued engagement and guidance from each of the designated goal leads will be critical.

V. Evaluating Return on Investment

HHS recognizes the importance of considering sustainable factors in its decision making process and the potential health and environmental consequences of failing to do so. At the Department level, HHS looks to highlight best practices, promote applicable research and data, and provide guidance and oversight for HHS capital investments.

Individual HHS Operating Divisions, who currently use a patchwork of tools and evaluative analyses, will continue to hone and improve processes to account for the following Return on Investment considerations:

a. Economic Lifecycle Cost / Return on Investment

As HHS identifies potential investments in programs, projects or initiatives, it must evaluate the expected return that those investments. In many cases, higher initial costs may lead to ongoing savings over the lifecycle of the investment, while lower initial costs may result in annual maintenance or replacement costs. For example, investments in prevention can prevent illness and reduce lifetime expenditures on disease care. While this reality is generally understood, however, it is not always implemented due to a combination of factors that make current life cycle cost analysis impossible to separate from other budget implementation and cost savings structures. There is a lack of transparency that results from a need to be economical in the amount of time spent on analysis, however, that economy causes us to lose sight of other issues not included in traditional cost benefit analysis structures. Clearly, analysis methods need to include initial costs, yearly costs and benefits to the entire system, contingent costs for emergencies and other periodic traumas to the system, removal and disposal costs and lifecycle replacement timeframes. Furthermore, analysis methods need to measure the cost of the current state – the "do nothing" scenario – so that projects and initiatives can be compared, not only against alternative projects but also against the current state. Projects, initiatives and efforts should identify an expected lifecycle cost or return during the planning process so that teams and decision makers can understand up front the expectations for the effort. Periodic evaluation data should be collected and trended against goals to identify underperforming programs and projects and provide oversight for improving their performance.

b. Social Costs & Benefits

The full complement of social issues to be included in Return on Investment (ROI) analysis should include: fair labor practices, fair trade, education access, human development, human rights, life satisfaction, health equity, cultural and ethnic integrity, ecosystem conservation, good governance, social capital, quality of life, prevention of health disparities, promotion of small businesses, worker health and safety, prevention of loss of habitat, and appropriate land use planning. Focus and expertise connecting expected social benefits and costs is needed to develop the tools and measures to appropriately and widely evaluate programs, efforts and initiatives. We will look for assistance from other executive agencies such as Department of Housing and Urban Development (HUD), Department of Labor (DOL), Environmental Protection Agency (EPA), Office of Personnel Management (OPM), Office of the Federal Environmental Executive (OFEE) and Office of Management and Budget (OMB) on these measures. We also are partnering with the HHS Environmental Justice Task Force, which is

targeting research and outreach especially aimed to support low income and minority populations.

c. Environmental Costs and Benefits

HHS embraces the guidance contained in Office of Management & Budget (OMB) circular A-4 (http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf) and Environmental Protection Agency's (EPA) *Guidelines for Preparing Economic Analyses* http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html , on how to conduct cost-benefit analyses when there are environmental impacts.

HHS has environmental compliance and stewardship programs at the major landholding OPDIVS (National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC), Indian Health Service (IHS), and Food and Drug Administration (FDA)) with professional staff to address the high risk aspects and impacts affiliated with biomedical research and the health and medical missions of the Department. Inclusion of environmentally-focused subject matter experts in major project planning facilitates the consideration of environmental costs and benefits in the project decision-making process.

All HHS OPDIVS are required to have an Environmental Management System (EMS) in place. The purpose of an EMS is to integrate environmental policies and accountability into day-to-day decision making and long-term planning processes across all agency missions, activities, and functions to reduce the agency's impact on the environment. While HHS cross-functional teams represent subject matter experts in sustainable buildings, energy, electronics stewardship, procurement and transportation and serve to ensure coordination across the programs, specific ROI analyses are not routine products of these collaborative efforts. Current EMS documentation ranks agency projects and initiatives on a relative scale but does not attempt to equate environmental impacts with their expected monetary costs to society. Focus and expertise connecting expected environmentally-related benefits and costs is needed to appropriately and widely evaluate programs, efforts and initiatives. Assistance from EPA, Office of the Federal Environmental Executive (OFEE) and OMB on these measures is requested.

d. Mission-Specific Costs & Benefits

As part of HHS' health mission, we have data and information about the costs and benefits of various interventions and their effects on health (e.g., health disparities, environmental health, chronic disease, obesity, physical activity, nutrition, cardiovascular health, cancer, vector borne diseases, infectious diseases, clinical treatments, hospital acquired infections, pharmaceuticals, food labeling, preventive health, tribal health, mental health and many other specific services and conditions). We have access to data and scientific evidence that is vital to the development of cost models and criteria for health impact evaluation of federal operations. While we have many of the necessary resources to develop these tools, we need health economists to review the literature, develop models and share these analyses with other agencies and organizations to enhance the current economic models for ROI and fiscal lifecycle analysis.

e. Operations & Maintenance (O&M) and Deferred Investments

HHS maintains the vision, goals and policy that all landholding agencies incorporate sustainable life cycle management principles of E.O. 13514 as a critical element in all maintenance, repair and improvement activities. Facility assessments are conducted on a three to five year cycle to produce a "Condition Index" for each asset as well as to determine non-recurring maintenance costs and maintenance backlog.

Limited Operations & Maintenance (O & M) resources require sound investment strategies, prioritized to sustain, maintain and make available reliable assets to accomplish mission critical and mission dependent functions in healthy, safe and code compliant facilities with a strong emphasis and desired return on investment for:

- Utilization efficiency
- Operational cost reduction
- Energy, water consumption and greenhouse gas reduction
- Protection and sustainment of resources
- Maintenance backlog reduction
- Protection of the environment

Deferred O & M investment considerations having lower priority for funding of maintenance or repair of facility components can be detrimental to both the condition of the facility as well as goals of E.O 13514 resulting in additional; operation or repair costs, energy and water usage, increased green house gas production as well as reduced reliability. Landholding agencies incorporate Reliability Centered Maintenance techniques as a cost effective maintenance strategy and perform life cycle cost analysis on all O & M investments. Maintenance backlogs are maintained to assure maintenance activities deferred beyond the optimal execution time are tracked for accomplishment as funding resources are made available.

f. Climate Change Risk and Vulnerability

HHS is aware of the dynamic relationship between global climate change and human health and well-being, and is taking a leadership role in efforts to respond and adapt to climate change. In fall 2009, HHS conducted an inventory of its activities related to climate change. HHS supports activities in the following areas: research and surveillance; community resiliency; and direct mitigation efforts. Future inventory updates can include assessment of risk and vulnerability to HHS programs and priorities.

HHS has taken steps to identify research needs related to the impact of climate change on human health. In April 2010, an NIH-led interdepartmental work group released a white paper that identified knowledge gaps related to the effects of climate change on health. This effort is expected to spark greater involvement of health scientists in climate change research. Future research, including cost and benefit models, will inform ROI development and refinement. For more information, please see the 2010 "A Human Health Perspective on Climate Change" report.

HHS also has begun to prepare the public health community for the impact of climate change, guided by our expertise in environmental health, infectious disease, and other fields. For

example, CDC is facilitating the efforts of federal, state, and local public health agencies to prepare for the impact of climate change on public health.

HHS leads or participates in a number of interdepartmental activities focused on climate change. HHS is co-leading a subcommittee on climate change and health within the United States Global Change Research Program (USGCRP) and participates in the Adaptation Task Force led by the Executive Office of the President.

g. Other, as defined by agency

HHS is committed to implementing programs, efforts and initiatives that demonstrate ROI in every aspect of cost and benefit analysis. For many years, we have focused on specific social, environmental and health benefits, balanced against available financial resources. Prioritization is necessary and difficult, as many important causes competing for the same funds. Some specific sustainability ROI considerations include:

- It is possible that a carbon cap and trade system will be established before the target date for GHG reductions (2020) occurs. The costs of selling and purchasing carbon credits will positively affect the ROI for building features that reduce use of energy from fossil fuel sources. This will be a potentially significant but as yet undefined variable in ROI calculations.
- ROI calculations typically focus on returns from energy and water savings. However, potential returns from indoor environmental quality improvements that directly impact health and productivity may be up to ten times higher. The aforementioned peer reviewed study highlighted in an Institute of Medicine report confirmed the link between Green Buildings and productivity and health.

As the Federal steward for health and human services, HHS must lead in researching and documenting these links and their cost implications. We must develop our own capital plans in a way that recognizes these links and incorporates them into our own operational systems and environments. We will continue to explore methods to demonstrate the link between health and productivity and cost.

VI. Transparency

HHS is committed to transparency of our sustainability efforts. We are working aggressively to enhance communication with the general public, other Federal, State and local communities, as well as among HHS staff. Our communication efforts include transparency of goals, progress, accomplishments and challenges. We are looking to educate and establish trust while encouraging innovation, research and development towards healthy, sustainable operations at all levels.

For examples of recent publications and outreach efforts, please visit:

- Sustainability at HHS (http://www.hhs.gov/about/sustainability.html) which includes several links to individual Operating Division websites
- Outreach via social media such as Facebook, Twitter, and You Tube

The *Go Green Get Healthy* internal website and promotional materials target HHS employees and feature educational information, events, and activities to enhance sustainability and wellness programs, and "Green Champion" employees.

Section 2: Performance Review & Annual Update

I. Summary of Accomplishments

Introduction

At HHS, we promote responsible environmental policy year-round since the health of the American people is directly linked to a healthy environment. We take pride in our year to year accomplishments regarding sustainability and are happy to support our current Administration's commitment to open government and transparency. A major accomplishment of the Department is the creation of a Sustainability Task Force and Workgroups. Accomplishments from each goal area supported by their respective workgroups are briefly described below.

Scope 1 & 2 Greenhouse Gas Reduction

In FY 2010, HHS reduced energy consumption by 4.4 percent as compared to FY 2009 with an overall decrease of 21 percent when compared to the FY 2003 baseline year. These results far exceed the FY 2010 SSPP goal of a 5.9 percent reduction from the baseline year. This is in large part due to renewable energy projects installed with ARRA funding and significant energy efficiency projects implemented with both ARRA and alternative financing funding. New alternative financing projects and sustainable, LEED rated building designs also were awarded. An emphasis on management also was enhanced in FY 2010 as an energy management workgroup was formed to focus and coordinate efforts throughout the Department. The workgroup established new goals for the FY 2011 Sustainability Plan, updated the HHS Metering Policy, established new training requirements and identified strategies to meet GHG reduction goals.

An in-house transportation planner coordinates, supports, and promotes a number of successful transportation initiatives at the CDC, which include a Platinum Level Partnership with the Georgia Clean Air Campaign. CDC has signed partnership certificates for each of its owned and leased facilities in Atlanta. In 2010, CDC and the Clean Air Campaign conducted training to educate personnel on transportation choices, including walking, bicycling, mass transit, vanpooling, carpooling, teleworking and alternative work schedules.

Scope 3 Greenhouse Gas Reduction

In early 2011, HHS conducted a survey to collect data on its federal employee commuter habits and began to offer a transit subsidy for bike riders. The HHS Go Green Commuter Survey data will be used in the FY2011 GHG inventory to determine the emissions associated with the federal employee commute. The data will be analyzed for significant trends (e.g., relationships between commuter habits and choices) that will be used to inform behavioral strategies to reduce GHG emissions. HHS also will use the survey to set baseline emissions and reduction targets for each OPDIV. Because there were concerns about the Volpe survey design, validity, and reliability, that survey was used as a foundation for the HHS survey. With regards to the bike rider subsidy, HHS federal employees who bike to work are now eligible to receive a $20 monthly subsidy through the Bicycle Subsidy Program. Within days of the program announcement, more than 200 inquires were made regarding the subsidy. Although this is a part

of an existing transit benefit, agencies should run this by employee unions to avoid delays in program administration.

HHS Fleet Green House Gas (GHG) Reduction

The HHS GHG (MT CO_2e) emission reduction initiatives have resulted in an improved prediction estimate from an earlier value of 3% to a current estimate of 11% compared to a 2008 baseline. The targets will be obtained because of HHS shift from low efficiency gasoline vehicles to model year 2010 high efficiency vehicles such as the Ford Fusion. The Department also improved the capabilities of its internal "petroleum" product reporting and monitoring via our Motor Vehicle Management Information System (MVMIS). Each affected HHS unit can now determine the effectiveness of its mission use of alternative fueled (flex fuel) configured vehicles and make better decisions about "right sizing" the fleet at local levels nationwide. The net effect is a sustained 25-30% reduction in petroleum products over time based on a 2005 baseline.

High-Performance Sustainable Design / Green Buildings

Laboratories

- HHS has a special challenge in improving the performance of its laboratories because their operation consumes far more energy and other resources than commercial office buildings. Nevertheless, great progress is being made. At CDC's Ft. Collins, CO, Building 401, a new laboratory and support space for CDC's Office of Infectious Disease uses 15.84% less energy for lighting and 43.87% less water than a standard laboratory. This project received a LEED® Gold for Commercial Interiors rating.

Facility Condition Assessments

- Facility condition assessments at NIH document the scope and date of commissioning and include recommendations for re-commissioning. They also identify the potential for new daylighting and strategies to improve existing daylighting.

Health in Buildings Research Initiatives

- The interdisciplinary Health in Buildings Roundtable, chaired by NIH, seeks innovative solutions to promote human health in the built environment, based on scientific research. It plans to establish metrics to measure the impact of the built environment on human health; develop business models with positive ROI, based on positive health outcomes; and, develop a database on the impact of the built environment on human health and well-being.
- A group of subject matter experts, led by HHS Region V, is working with the Government Accounting Office (GSA) to fill the existing gap in existing sustainability rating systems, such LEED®, in the area of indoor environment impact on building occupants and creation of features that encourage tenants to engage in physical activity or make other healthy lifestyle choices. The group envisions a certification system that would incorporate these concepts and features to promote positive health outcomes.

- NIH has developed protocols for remediation of contaminants during facility decommissioning and deconstruction which have been incorporated in the new American Industrial Hygiene Association/American National Standards Institute AIHA/ANSI Laboratory Decommissioning standard.
- NIH has a research project on health impacts of artificial lighting systems, and research and development of programmable LED lighting systems to mimic the natural color spectrum of daylight. Such systems could bring the health benefits of daylighting to interiors of existing buildings while reducing energy use and heat generation, and elimination of mercury-containing fluorescent lights.
- The NIH comprehensive mercury reduction policy and program is being deployed throughout HHS. It aims to eliminate all uses of mercury in its facilities by increasing general awareness of mercury hazards, encouraging use of safer alternatives, and preventing spills.

Water Use Efficiency and Management

In FY 2010, HHS reduced water consumption by 2.4 percent as compared to FY 2009, and is currently at the FY 2007 baseline consumption. Several water efficiency projects were completed in FY 2010 such as cooling tower upgrades, well water use, highly efficient plumbing fixtures and xeriscape landscaping. A boiler makeup water reduction project was started in FY 2010 and will be completed in FY 2011 that will yield greater decreases in FY 2011 and 2012. In addition, a water management workgroup was formed that established new water reduction goals, coordinated and attended a water training course, identified additional training needs and developed a water leak detection policy.

Pollution Prevention and Waste Elimination

In 2010, HHS completed its first Pollution Prevention (P2) Waste Assessment of all operating divisions with a focus on HHS owned and/or operated facilities. The assessment also attempted to capture non-landholding and lease facilities. Even though data from these facilities is not reportable, it enables outreach and raises awareness. Overall the initial assessment forms the basis for improvements in data collection and a follow up assessment will be conducted in the second half of 2011. Although the data collection was imperfect, the information yielded recycling rates ranging from 7% to 46 % and an overall recycling of 17%.

HHS developed the comprehensive 2011 HHS Policy "Restricting Procurement, Use, Storage and Disposal of Mercury and its Compounds on HHS Facilities." In accordance with the SSPP, the policy supports the task of reducing and minimizing the acquisition, use and disposal of hazardous chemicals and materials. The mercury policy builds on past successes, is historic in its scope and breadth, and supports the Department's mission to protect the health of Americans by preventing environmental releases of mercury from HHS facilities. HHS believes its mercury policy can be readily adopted by other Federal agencies. This will provide an example of federal leadership in pollution prevention and will result in significant reductions in potential human exposure to this toxic material.

P2WE Challenges include:

- Improved data capture for 2011 waste assessment may confound comparison with previous data and require adjustments of future diversion and Scope 3 reductions goals.
- Accurate capture of construction and demolition waste remains elusive.
- Competition for scarce resources especially between non-hazardous solid waste management (solid waste, diversion/recycling/waste to energy, composting) and regulated wastes management (hazardous waste, medical waste, radioactive and mixed wastes).
- Resources for data collection are scarce and compete with overall HHS mission. Data gaps inhibit effective prioritization and quantifying reduction goals.

Sustainable Acquisitions

HHS is developing a Sustainable Acquisition Policy Memorandum (APM) to implement: (1) the mandatory collection of green purchasing data in the Departmental Contracts Information System (DCIS); (2) the addition of sustainable evaluation criteria into applicable solicitations; and, (3) the incorporation of sustainable acquisition provisions and contract clauses into applicable contracts. The APM will facilitate the measurement of the 95% sustainable acquisition threshold and enhance the effectiveness of green procurement practices at HHS.

Electronic Stewardship and Data Centers

HHS has developed the Electronic Stewardship Policy and the Policy for Data Center Management. The establishment of these policies will:

- Ensure we comply with the Executive Order (E.O.) 13423 and 13514.
- Reduce energy consumption.
- Reduce toxics disposal related to electronics.
- Save money through reduced energy consumption and increased electronics life expectancy.

One project worth noting is the migration of FDA datacenter from Rockville, MD to Ashburn, VA. The process of transforming FDA's information systems through the migration to new, modernized data centers was a high-priority initiative, developed as part of the Information Computing Technologies for the 21st Century (ICT21) program. All FDA Production, Development and Test environments were migrated to new datacenters, which in turn closed down the antiquated Parklawn facility.

The ability to standardize the infrastructure allowed the FDA to achieve 90.2% virtualization. This consolidation effort resulted in a reduction of 110 database servers to 18. Having achieved a high percentage of virtualization reduces the physical footprint in our datacenters thus reducing power and cooling utilization. One state-of-the-art facility in Ashburn, VA, and another at the FDA White Oak Campus provide the high performance and data storage required in today's technology environment while anticipating a cloud computing platform. The modern, redundant architecture of these data centers protects FDA systems from internal and external security threats. The robust electrical and cooling support systems ensure continuous operations under adverse conditions.

In addition, HHS has:

- Established a Department-level Electronic Stewardship Workgroup (ESWG) to discuss progress towards meeting the Electronic Stewardship (ES) Goals, share lessons learned and best practices on ES activities, and contribute towards workgroup deliverables. The ESWG contributed to the development of policies, assisted in the development of a reporting mechanism to capture progress towards meeting the sub-goals, contributed to revising the SSPP, and mandated enrollment in the Federal Electronics Challenge.
- Consolidated legacy mainframe workloads and began server virtualization to reduce the number of physical servers.
- Added contract language and engaged procurement officers to only purchase green office supplies as well as EPEAT and Energy Star compliant devices.
- Enabled duplex printing on new and legacy printers, and instituted printing best practices including default black and white printing, toner and print cartridge returns, and no personal desktop printers without justification.
- Instituted green best practices for the office including minimal use of personal fans, heaters and refrigerators, and automated lighting controls.
- Aggressive Power Management campaign to meet mandate of being Power Management (PM) enabled on 100% of eligible devices.

Agency Innovation

At HHS encourage innovation so as to bring new ideas to our workplace that will help us carry out our mission activities and meet our sustainability goals. To encourage innovation in sustainable practices and technologies we use an array of incentivisation tools including *HHSinnovates*, a new employee award program created as part of the HHS Open Government initiative. Twice a year, HHS employees are invited to submit innovations via an intranet site. The top innovations are posted for secure, on-line voting and commenting by the entire HHS community. One of the recent award winners for a sustainability innovation was the CDC Laboratory Recycling Pilot Program. The pilot program created a procedure for sterilizing plastic containers used in laboratories so they no longer pose a potential biosafety hazard and can be safely recycled. Over 16 months this innovative venture led to a total of 13,772 pounds of solid plastic waste being recycled instead of contributing to landfill waste.

Conclusion

While these summaries are only a snapshot of the steps we are taking at HHS to make the world a greener place to live, they illustrate how we improving our practices. At HHS we are committed to doing whatever is necessary to protect the health of all Americans, and we recognize that ensuring a clean and healthy environment is a fundamental part of that effort.

II. Goal Performance Review

GOAL 1: Scope 1 & 2 Greenhouse Gas Reduction

a. Goal Description

1. Buildings: HHS will reduce its total scope 1 (stationary sources) & 2 GHG emissions by 15.5% by 2020 through a combination of energy reduction efforts and the use of renewable energy. This reduction equates to a 32.5% reduction in energy intensity per square foot. The reductions numbers represent an anticipated gross square footage increase of approximately one million square feet at CDC and NIH between FY 2010 and FY 2020.

The overall 32.5% reduction goal is based on the results of in depth analysis of project space usage and management, current energy consumption trends, renewable energy use, and anticipated efficiency projects particularly those NIH and IHS projects planned to be completed with ARRA funding in FY 2012 with savings realized in FY 2013 and beyond. Each OPDIV has developed a plan to meet the energy reductions requirements of Executive Order (EO) 13514 of 30% energy use reduction as compared to a FY 2003 baseline. The plan centers on a one percent decrease from FY 10 to FY 11, two percent between FY 2012 and 2013, and three percent thereafter through FY 2015. Energy reductions from FY 2015 through FY 2020 are estimated at 0.5% per year as major projects will have been implemented. While the OPDIVS will strive to meet this goal by FY 2015, it may take additional time to complete all projects planned.

HHS is reducing per capita energy consumption through space management policies but has not developed a means of directly measuring the energy intensity reduction.

2. Fleet: HHS is projecting an 11% reduction in scope 1 (mobile sources) GHG emissions (using FY08 as the baseline) by 2020. This number will be adjusted based on actual experience during the performance cycle 2010 through 2020. HHS will continue to make progress towards this goal by:

1) Reducing petroleum use in fleet vehicles. The HHS F.A.S.T. Report reflects a consistent petroleum GGE reduction for the reporting periods FY09 and FY10 when compared to the FY08 baseline.

Table 3: HHS Fleet CO2e Reduction Table

	Baseline FY08	FY09	FY10	MT CO2e Average
Total CO2e in MT	18,203	16,543	15,926	16,890
Net Change Yr to Yr		1,660	617	
Percent Change Yr to YR		9%	4%	6.42%
Percent Change from Baseline		9%	13%	10.81%

2) Increasing use of alternate fuels in fleet Alternate Fuel Vehicles (AFV). Details on the use of HHS alternative fuel vehicles are contained in the HHS Fleet Alternative Fuel Vehicle Acquisition Report.
3) Optimize use of vehicles and right-size fleet. GSA is currently developing agencies methodologies for determining the optimum fleet inventory and composition. These methodologies shall assist agencies in selecting vehicle options based on lifecycle cost analysis, HHS anticipates more on this on or about the 4th quarter FY11.
4) Increasing use of low emissions and high fuel economy vehicles. The responsibility for purchasing low emission and high fuel economy vehicles primarily rests with GSA.
5) Replace conventional senior executive fleet with low-GHG emitting, highly-efficient vehicles. HHS has developed a plan for replacing the conventional senior executive fleet with low-GHG emitting vehicles via normal attrition beginning in FY2013.
6) Agencies operating shuttle buses should discuss efforts to streamline existing routes by consolidating ridership with other agencies. Identify specific challenges related to consolidation of and/or sharing of transportation services with other agencies. HHS has been investigating combining shuttle bus operations with other agencies in the DC area.
7) Discuss agency's efforts to implement sustainable transportation options by: acquiring low GHG emitting vehicles such as hybrids and AFV; optimizing the number of vehicles in the agency's fleet, using alternative fuel in AFV and Flex Fuel Vehicles (FFV); developing alternative fuel infrastructure; direct spending on training; and procurement of environmentally preferable motor vehicle products. Identify specific challenges in implementing these or other items related to implementation of sustainable transportation within your agency. HHS has made great strides in the acquisition of low GHG emitting vehicles as demonstrated by the FY2010 GHG Inventory report submitted in Jan 2011. HHS fleet managers meet on a monthly basis to discuss strategies for improvements in optimizing the number of vehicles and developing an alternative fuel

infrastructure. Training of fleet managers has been an HHS priority with additional training planned for FY2011. HHS has a green procurement work group that is addressing the procurement of environmentally friendly products including motor vehicle products. The greatest obstacle faced by the Department is in the collection and reporting of data on a real time basis utilizing the FAST system. It is hoped that in the future the system can be upgraded to provide more accurate real time reports. An additional obstacle is that changes of the Agency mission that will require additional vehicles to be added to the inventory.

b. Agency Lead

Overall Lead: **Assistant Secretary for Administration (ASA)**

Sub Goal Leads:

1. **Buildings:** Assistant Secretary for Administration (ASA)/Office for Facilities Management and Policy (OFMP)
2. **Fleet:** Assistant Secretary for Administration (ASA)/Program Support Center (PSC)

c. Implementation Methods

1. Buildings: **HHS will continue to reduce scope 1 (stationary sources) & 2 emissions by continuing with the well-established programs described below:**

- HHS has had a Department-wide energy program since 1994. The program consists of a combination of awareness and energy reduction strategies through audits of existing buildings and utility analysis. Design reviews are conducted at the OPDIV level to insure all new construction conforms to the statutory requirements. Section 3-3, Volume 2 of the HHS Facilities Program Manuals contains more details of the program.
- As a result of the HHS FY 2010 SSPP, an energy management workgroup was formed to coordinate efficiency efforts throughout the Department. The workgroup consists of the energy managers of each HHS OPDIV and the key support personnel. Meeting weekly, this workgroup has been able to establish primary goals and objectives to meet not only the greenhouse gas reductions goals, but those of EO 13514 and EISA 2007. The workgroup will continue to meet weekly in FY 2011 and at least bi-weekly in FY 2012.
- HHS will continue to increase the use of non-polluting renewable energy sources. Multi-year agreements with different power suppliers are used to purchase renewable energy credits. In FY 2011, IHS Aberdeen Area will complete the construction of a 50kW wind generation project at the Rosebud Service Unit and a 10 kW PV array at the Pine Ridge Service Unit.
- The HHS headquarters provides technical assistance for the HHS OPDIVS on all energy and water conservation projects as well as administrative, policy, and technical support to OPDIVS in meeting the requirements of EPAct 05, EOs 13423 & 13514, EISA and all other laws and regulations.

- Energy and water efficiency training (including Renewable Energy) for our component Energy Coordinators, acquisition personnel, engineers, building managers, and other employees and contractors involved in energy and water conservation. HHS is working to develop Energy and Water Audit Training in FY 2011 with the goal of training in-house staff to perform EISA2007 required audits on Covered Facilities. The plan is to have the course replicated in two different locations in FY 2012.
- HHS focuses efforts on outreach with all employees. Outreach tools used to the promote the goals of the Department include the HHS Green Champion Awards Program, major awareness events for Earth Day and Energy Awareness Month, monthly outreach toolkit on sustainability topic areas, and training. HHS Green Champions Awards will be presented in the third quarter of FY 2011. HHS will develop an outreach toolkit on Energy Efficiency for the 2011 October Energy Awareness Month. The headquarters building will host an energy expo in 2011.
- HHS headquarters works to promote and facilitate renewable energy, water conservation, and alternative financing projects. In FY 2011, every Energy Workgroup meeting will include a brief presentation and discussion on new or relevant efficiency technologies.
- OPDIV energy measurement charts and scorecards are used to promote discussion and competition amongst the OPDIVS. The charts will be updated at the end of FY 2011.
- The Department has established Environmental Management Systems (EMS) at the appropriate facilities and negotiated with OFEE for the implementation of a Higher Tier EMS for headquarters and an additional multi-site organizational EMS for non-landholding OPDIVS and Regional Offices. Energy and transportation representatives are members of the EMS team. The expansion of the EMS supports sustainability goals in many ways including formation and coordination of green teams, training, outreach and awareness initiatives.

Most of the actual energy saving programs and projects are implemented in the field. The current energy management function located in the central office provides technical support and Department-wide reporting only.

Specific projects to be completed at the OPDIVS include:

- In FY 2011, IHS will complete the installation of two PV systems, 16 kW and 77 kW respectively, at Ft. Yuma and Kayenta facilities. Additionally, the Tucson Area plans to install a PV system at the Santa Rose Clinic.
- CDC has one FY 2011 project that is in the early stages of scope development with a budget of $400,000 to add additional metering.
- The OS Humphrey Building will finish the installation of a VFD and soft starter motor project in FY 2011. The energy savings expected from the project is 324,460 kWh or roughly two percent of the Hubert H. Humphrey Building annual electricity consumption with corresponding energy cost savings of $380,000 year.
- NIH will complete the implementation of an automated computer shutdown program that was estimated to reduce energy consumption by three million kWh annually and reduce costs by approximately $400,000 annually.
- NIH Bethesda Campus will continue with the implementation of two UESC's in FY 2011

and 2012. One is an initial phase of retro-commissioning on several buildings and installation of variable frequency drives, the other is the second phase of a building controls project. These projects are estimated to save $1.5 million, annually. Also in FY 2011, a new ESPC for Frederick Cancer Research is expected to be signed. The previous Basic Ordering Agreement (similar to a UESC) with Constellation Energy/Allegheny Power expired right after the steam project delivery order was consummated, so a new ESPC was required to search for more savings.

The sustainable buildings program and electronic stewardship significantly impacts the overall energy use in the Department. Implementation of these programs will help reduce the energy intensity in the facilities.

2. ***Fleet Emissions:*** **Continue the acquisition strategy of obtaining alternative fueled vehicles while simultaneously decreasing gasoline powered (carbon based units in the fleet):**

A recent Memorandum from the Executive office of the President, dated April 18, 2011, directed (See Paragraph 4(1) thru 4(6)(e)(2)) which requires HHS to be in compliance with guidelines relative to ***(i)*** the commencement of acquisition of alternative fueled vehicles by 2015, ***(ii)*** optimized fleet sizes, ***(iii)*** determining optimal fleet inventory, ***(iv)*** compliance with respect to EO 13514 via the use of alternative fuels, and ***(v)*** be in compliance with existing legislation, and current pertinent regulations.

"Right-size" the HHS fleet. Continue the current program initiative designed to formalize and implement an HHS nationwide Vehicle Allocation Method (VAM). This will be accomplished by continuing an existing partnership with the National Renewable Energy Laboratory (NREL) for an automated VAM system model. See Memorandum from the Executive office of the President, dated April 18, 2011, directed (See Paragraph 4(6) (a through (e) respectively.

Improve Fleet Management training, promotions, and awards. Require that all first level Fleet Management staff attend federally sanctioned training offered by GSA annually, focused on the following Executive Orders: EO 13423, EO 13514 and 13513. This training is offered via FEDFLEET professional seminars annually. Training for line Fleet managers shall be mandatory.

Lobby for universal road symbols to identify "alternative fuel", e.g., use bio-based fuel with plant symbol.

d. Positions

In order to further reduce energy consumption, HHS will need to hire additional energy professionals at the Operating Division (OPDIV) level. The best use of an energy manager's time is out in the field identifying projects and analyzing utility data. Energy managers should not be saddled with the project management duties for the projects they develop but rather maintain a consulting role in connection with the project - not be the lead. Further, energy management should be the primary function of the position instead of a collateral duty. At the

OPDIV level, 4 additional FTE's are required if the energy management function is the primary duty and the project management functions are handled by others in order to free up the time of our existing energy managers.

If energy program oversight is required, the Department will need 1 to 2 additional energy personnel depending on the level of oversight required.

Each OPDIV and STAFFDIV will need to increase staff in order to appropriately calculate goals and strategies associated with fleet fuel use with regards to meeting the HHS COE reduction strategies. This effort could require .5 FTE per location or an increase of 2 total FTE's.

e. Planning Table

	SCOPE 1&2 GHG TARGET	Unit	**FY 10**	FY 11	FY 12	FY 13	FY 14	FY 15	..	FY 20
Buildings	Energy Intensity Reduction Goals **(Federal Target)** (BTU/SF reduced from FY03 base year)	%	15%	18%	21%	24%	27%	30%	..	30%
	Planned Energy Intensity Reduction **(HHS Target)** (BTU/SF reduced from FY03 base year)	%	19%	20%	22%	25%	28%	31%	..	33.5%
	Renewable Electricity Goals **(Federal Target)** (Percent of electricity from renewable sources)	%	5%	5%	5%	7.5%	7.5%	7.5%	..	7.5%
	Planned Renewable Electricity Use **(HHS Target)** (Percent of electricity from renewable sources)	%	5%	5%	5%	7.5%	7.5%	7.5%	..	7.5%

Fleet	Petroleum Use Reduction Targets **(Federal Target)** (Percent reduction from FY05 base year)[1]	%	10%	12%	14%	16%	18%	20%	..	30%
	Planned Petroleum Use Reduction **(HHS Target)** (Percent reduction from FY05 base year)	%	29%	29%	25%	26%	27%	28%	..	30%
	Alternative Fuel Use in Fleet AFV Target **(Federal Target)** (Percent increase from FY05 base year)[2]	%	61%	77%	95%	114%	136%	159%	..	159%
	Planned Alternative Fuel Use in Fleet AFV **(HHS Target)** (Percent increase from FY05 base year)	%	145%	170%	197%	227%	259%	295%	..	295%
	(New) Senior Executive Fleet Replaced with Low-GHG, High Efficiency Vehicles **(Federal Target)** (Percent replaced from FY08 base year)	%	0%	0%	50%	100%	100%	100%	..	100%

[1] In fleet vehicles.
[2] The increased percentage of alternative fuel use is relative to the FY 2005 baseline.

	Total Scope 1&2 GHG Emissions (Comprehensive) **(HHS Target)**	MMT CO2e	909.5	909.5	884.4	859.5	833.9	826.4	..	830.5
	Total Scope 1&2 GHG Emissions (Subject to Agency Scope 1&2 GHG Reduction Target) **(Federal Target)**	MMT CO2e	909.5	909.5	884.4	859.5	833.9	826.4	..	830.5
	Overall Agency Scope 1 & 2 Reduction (reduced from FY08 base year)[3] **(HHS Target)**	%	7.1%	7.1%	9.7%	12.2%	14.8%	15.6%	..	15.2%

f. Agency Status:

In FY 2010, HHS developed a stronger foundation and plan for achieving EO energy reductions and GHG savings under the structure of the HHS Energy Program. The core of the HHS Energy Program and structure is the Energy Management Workgroup. This team has established priorities and actions plans under the direction of the HHS Energy Officer. Focusing on the completion of comprehensive audits, installation of energy meters, automation of data gathering and reporting, training and outreach the workgroup has determined key actions to be completed in order to achieve significant savings.

The workgroup began many of these actions in FY 2010 through the completion on-line training webinars, offering of major outreach events and monthly toolkits, identification of automated reporting tools and development of policy documents. Additional, alternative financing contracts and specifics projects were completed to advance energy savings. Guidance documents on the completion of audits and commissioning was identified or established as well. It is critical that audits be completed in order to identify the most cost effective efficiency projects.

In FY 2011, the OPDIVS will implement the action plans established by the workgroup. OPDIV metering plans will be updated and the installation of meters will continue. Training on the performance of comprehensive auditing is planned for August 2011 and two more additional dates in FY 2012, in order to train HHS energy personnel to perform in-house audits. Once the audits have been completed specific projects can be planned for implementation.

The automated data gathering and reporting tools that have been identified will be populated with facility information and specific details. FY 2011 will be the year that the tools set-up and refined, so that in FY 2012 more time can be focused on the implementation of projects.

[3] GHG emissions are measured in mtCO2e and the percentage reductions are reductions in mtCO2e.

In FY 2011 and 2012, training will be a key component of efficiency efforts. Webinar offerings will be highlighted and strongly promoted, and in-house training will be provided on topics such as auditing, automated data reporting tools, renewable energy applications, and new technologies. These course agendas will be developed by the workgroup and coordinated by HHS headquarters and the workgroup.

Outreach has become a focus in FY 2011 and will continue to gain importance in future years. Educating all employees on the goals and initiatives will maximize savings and efficiency. Outreach will work to change employee habits on the use of electronics and the building systems, and foster new ideas from the entire HHS workforce.

When calculating the GHG emissions reduction, HHS used a GHG per energy use intensity value (GHG emissions/MMBtu) based upon FY 2010 data. It was assumed that the energy savings (by energy type) to be realized would be in the approximate same ratio as the current energy use. This ratio was applied to the estimated energy savings to determine the resulting GHG emissions.

HHS will implement a consolidated Enhanced Motor Vehicle Management Information System (EMVMIS) beginning in FY12. This resource will allow for Department data to be consolidated for all leased, owned, and rented fleet assets and consolidate all of the associated Green House Gas Emission statistics. The project should be complete in FY2013 and implemented in FY2014.

g. Return on Investment:

HHS OPDIVS modify metering plans as the life-cycle cost figures change for specific buildings. In some cases, buildings have been removed from the metering lists and in other cases new buildings have been added. These will be reflected in the update to the metering plans due in June. Additionally, some OPDIVS, such as CDC, have deemed it cost effective to implement all energy meters in a building at one time. Therefore, some electrical meters may not be installed by FY 2012 in order to minimize first cost by installing them with natural gas and water meters in FY 2013.

HHS has some buildings with expiring lease agreements, major renovations planned, or scheduled to be demolished in the near future, thereby making the implementation of otherwise life-cycle cost effective projects ineffective. The HHS energy and water workgroups have established a ten-year simple payback as the indicator whether a project is cost effective or not. Efficiency projects will not be implemented for buildings for which such circumstances will change in less than 10 years

Renewable energy purchases will not exceed the required 7.5% unless the cost to purchase is equal or less to the cost of standard electricity. Renewable energy on-site application projects will not exceed the 7.5% target unless the project is cost effective with a simple payback of 10 years or less.

h. Highlights:

Successes:

- As a result of the HHS SSPP, an energy management workgroup was formed to coordinate efficiency efforts throughout the Department. The workgroup consists of the energy managers of each HHS OPDIV, and the key support personnel. Meeting weekly, this workgroup has been able to establish primary goals and objectives to meet not only the greenhouse gas reductions goals, but those of EO 13514 and EISA 2007.
- In FY 2010, the energy consumption of HHS facilities was 8,512,821 million British thermal units (MMBtu) over 31.3 million square feet for an energy consumption rate of 272.3 MMBtu per thousand gross square foot (kSF). The total annual energy consumption includes the credit for renewable energy purchases, and is a 21 percent decrease when compared to the FY 2003 baseline of 344.8 MMBtu/kSF. The FY 2010 energy consumption rate for HHS facilities was 4.4 percent less than the FY 2009 usage.
- The availability of ARRA funds in FY 2010 allowed the HIS Aberdeen Area to fund multiple projects that will improve building system efficiencies (power and water) and employ renewable energy technologies resulting in system reliability that is expected in modern health care facilities. Several HVAC systems in the Area are currently being modernized with new control system components that will replace aged and poorly performing pneumatic with modern Direct Digital Control (DDC) systems. Testing, adjusting and balancing of ventilation systems that were funded with ARRA dollars will ensure that system performance is optimized and establish new benchmarks of performance at existing facilities with HVAC systems that were constructed several years ago.
- In addition, ARRA funding has been used to develop two renewable energy projects (Rosebud and Pine Ridge) in the IHS Aberdeen Area. These projects are in the construction phase and include 50 kW wind generators and a 10 kW PV array at each of the Service Units. This renewable energy source will produce green energy that will be used to reduce the energy purchased from the local electrical utility, which will result in a reduction of utility "demand" charges and a substantial savings in power consumption charges. These projects are on Indian lands leased to IHS and all energy produced by the wind and PV systems will be consumed at the facilities where the energy is produced.
- The NIH Bethesda Campus had two Utility Energy Service Contracts (UESC) implemented in FY 2010. One is an initial phase of retro-commissioning; the other is the second phase of a building controls project. The NIH Frederick campus developed a new ESPC to replace the previous Basic Ordering Agreement (similar to a UESC) with Constellation Energy/Allegheny Power, which expired right after a major steam plant construction project was consummated. This ESPC will enable the implementation of further efficiency projects and is expected to be signed in FY 2011.
- The IHS Blackfeet Service Unit received an Energy Star Portfolio Manager of 84. This score resulted in the unit being awarded an energy star award. This award is rare for a facility that is 24 years old and for a hospital that is open 24 hours a day and 7 days a week.

Challenges:

- A large percentage of the HHS overall energy usage is dedicated to laboratory environments where safety considerations preclude many common reduction strategies. A significant percentage of the total energy demand of our facilities is associated with process loads and specialized laboratory and health care equipment. These uses may not be subject to energy reduction requirements and in many cases energy efficient models of this equipment have not been developed or rated by Energy Star to identify products for preferential procurement.
- Much of the "low hanging fruit" has been completed. Multiple resetting of the baseline year for comparison has resulted in previous improvements not being reflected in current reports. Most remaining proposed projects have poor LCCA results. In addition, the costs associated with carbon emissions must be considered in cost effectiveness calculations. Metrics and methods for estimating these costs are not available and will be determined by pending climate change legislation. There are few opportunities on HHS held assets to achieve significant carbon sequestration.
- An emergency response incident could easily wipe out any savings. For example, running generators to continue operations in the event of an extended power outage, or long periods of extended hours of operation as seen in the H1N1 response. One would also expect increased transportation costs in this scenario.
- Lack of funding for energy projects – alternative financing projects will not work at a number of HHS facilities (remote facilities and project totals of less than $2 M).
- Renewable energy costs are significantly higher than fossil fuel generated energy. Renewable energy resources of sufficient capacity to meet the needs of areas such as Washington DC where large facilities are concentrated are not available or planned.
- There is a lack of personnel dedicated to reducing energy consumption (identifying projects). Funding for personnel needs should be addressed in budget requests.
- Fleet stationary "electric vehicle" charging stations require special engineering at all HHS sites (owned, leased and/or rented). This will require a metering strategy so that a distinction can be made for electric power use between building and charging use.

GOAL 2: Scope 3 Greenhouse Gas Reduction & Develop and Maintain Agency Comprehensive Greenhouse Gas Inventory

a. Goal description

In the FY10 SSPP, HHS set a scope 3 reduction target of 3.3% by FY20. The following were FY20 reduction targets for the subcategories:

- 7.5% for transmission and distribution (T&D) losses from purchased electricity
- 1% for federal employee travel
- 14.5% for contract waste and wastewater treatment

b. Agency lead for goal. Assistant Secretary for Administration (ASA).

c. Implementation methods The Department has established Environmental Management Systems (EMS) to identify, plan and track environment related improvements throughout all operations. Based on the EMS, Greenhouse Gas Inventory (GHG) Teams were created to complete HHS' inventories. The GHG Inventory team is led by the HHS GHG Inventory Manager (herein referred to as HHS GHG Manager) and each landholding OPDIV has a representative on this team. The process is described under the *Development of the Agency's FY 2010 Greenhouse Gas Inventory* section.

Reducing scope 3 GHGs is the responsibility of every single employee who travels, commutes, or disposes of waste in any operational units across the Department with special responsibility for the systems for transportation, energy and waste management by human resources, transportation, facilities and health and safety professionals. Each of these disparate groups will implement programs, educational efforts, policy improvements and organizational structures and systems to improve the environment and culture that effects transportation, energy and waste disposal choices. The EMS supports sustainability goals through focused planning, improvement and tracking activities which may include the formation and coordination of green teams, training, outreach, and awareness initiatives. The following will describe each planned activity and provide specific milestones for FY 2011 and 2012 towards achieving the scope 3 subcategory reduction targets as well as improving data accuracy, calculation, and implementation of the GHG inventory.

Federal employee travel (business travel and commuting): Federal employee commuting constitutes 80% of the emissions for this category. While 1% reductions in business air and ground travel will reduce emissions, HHS must reduce the number of daily commuters as well as increase the use of public transportation to achieve a 1% mtCO2e reduction for the entire subcategory. This reduction target is based on increasing participation in the public transportation subsidy program by 2%; encouraging steady increases in teleworking and alternative/compressed schedule options for eligible employees; and reducing business travel by substituting in-person meetings with teleconferencing or virtual meetings when practical. In April of 2011, HHS conducted survey to collect data on HHS federal employee commuter habits. This data will be used in the FY2011 GHG inventory to determine the emissions associated with the federal employee commute. The data will also be analyzed for significant trends (e.g., relationships between commuter habits and choices) that will be used to inform

behavioral strategies. HHS will also use the survey to set baseline emissions and reduction targets for each OPDIV. Having this information will empower each OPDIV to motivate managers to promote the program with their own staff.

A recently released transportation policy broadens the scope of allowable modes of transportation costs under the current transit subsidy program. As mentioned previously, HHS federal employees who bike to work are now eligible to receive a $20 monthly subsidy through the Bicycle Subsidy Program. Many of HHS OPDIVS have bike rider clubs and events as well as secure location for bike storage, lockers and showers. HHS anticipates a modest expansion of these programs in FY2011 and 2012 throughout the Department.

The current information technology (IT) infrastructure necessary to meet the conference, collaboration, and telework needs of the entire Department is improving. For example, NIH has increased its use of web conferencing by 30%, which likely contributed to the 2.3% reduction in the mtCO2e emissions from ground travel. The FDA currently has set a personal computer refresh process goal for all employees to have laptops and docking stations to be eligible to work at an alternative site. The FDA's IT infrastructure for remote access has been enhanced significantly to enable use by 10,000+ employees at one time. In addition, FDA has a pilot project planned for hotelling and office sharing with an emphasis on teleworking and space reduction.

The HHS Program Support Center (PSC) has partnered with the Office of Personnel Management to provide free training to employees and managers to increase telework awareness and knowledge. This pilot will be an important step to inject knowledge into the organization on an important government wide initiative that could reduce cost, improve employee morale, reduce fuel consumption and decrease carbon emissions. These programs coupled with leveraging the CDCeducation and outreach campaigns and other community resources to promote telework, use of public transportation and active commuting will likely result in significant increases in program use. For FY2011 and 2012, HHS plans to use the best practices and lessons learned from the aforementioned programs.

Contracted waste disposal: Contracted waste disposal comprises 7% of the scope 3 emissions. A 15% reduction target for this category is based upon increasing recycling rates and decreasing waste generation through sustainable practices such as reducing paper consumption by double side printing, promoting printing only when necessary and increased emphasis on the use of paperless office procedures, electronic documents for conferences, and electronic records technology.

HHS continues to consolidate and improve the data collection, tracking, and trending systems for all waste management systems. HHS created a draft report that itemizes all types of waste and operational units are evaluating the systems in place and needed to consistently account for and report these metrics. In FY11 and FY12, HHS plans to conduct pilot contracted waste disposal characterization study in a location where the waste is sent to a landfill as opposed to an incinerator. To further reduce waste and meet our target, HHS will also leverage programs and strategies described in Goal 5 Pollution Prevention and Waste Reduction; and Goal 7 Electronic Stewardship and Data Centers sections.

T&D losses from purchased electricity: Transmission and Distribution (T&D) losses from purchased electricity constitute 13% of the scope 3 emissions. The reduction of electrical T&D losses will closely mirror the reduction of scope 2 emissions from purchased electricity. HHS numbers may vary from year to year because the factors of influence constantly change. These factors include facility growth, equipment power use, the weather, patient load, fluctuations in the number of HHS employees, mission changes and emergency response operations.

HHS has implemented the following infrastructure strategies to emissions in this category:

- Reducing electrical energy use thereby reducing electrical T&D losses;
- Reducing the distribution distance by selecting power sources closer to the point of use or utilizing on-site power generation;
- Selecting sources that have more efficient transmission and distribution systems (e.g., Smart Grid, two-way flow and communication);
- Increasing use of non-polluting renewable energy and/or low pollution sources (such as wind) where losses have minimal impact on GHG emissions.

To further reduce T&D losses, HHS leverages programs and strategies described in Goal 1 Scope 1 & 2 GHG Reduction; Goal 3 High-Performance Sustainable Design / Green Buildings & Regional and Local Planning; and Goal 7 Electronic Stewardship and Data Centers sections.

Planned agency activity or policy implementation to improve data accuracy and overall data collection and analysis methods related to Scope 3 GHG emissions. In mid-April 2011, HHS surveyed its federal workforce to collect data on HHS federal employee commuter habits. More than 16,500 federal employees (20% response rate) located in the US and its territories responded to the survey. The Goal 2 Work Group will use this data to: calculate emissions and set targets for each OPDIV; calculate the emissions for the Department using the survey data; adjust the FY08 baseline, FY10 inventory, and if necessary the FY20 target; and analyze data for significant relationships that may inform intervention strategies. The Goal 2 Work Group also will leverage other policy and data calls (e.g., the HHS Telework Policy and the Goal 5 Waste survey) to avoid duplication of efforts and streamline processes.

Based on this SSPP, HHS established "Green Teams" one of which is GHG Inventory team using the aforementioned EMS. The GHG Inventory team was led by the HHS GHG Manager and each landholding OPDIV had a representative on this team. The HHS GHG Manager served as the organizational coordinator on HHS GHG inventory mandates/data collection as well as established procedures and awareness programs to ensure organizational personnel and operations complied with the applicable inventory guidelines. Using the guidance and adhering to the requirements put forth by the HHS GHG Manager, the OPDIV GHG Managers coordinated data collection as well as documented (i.e., information needed, responsible office, points of contact, etc.) the collection process.

Methods used by the agency to calculate its scope 3 GHG emissions. HHS identified the required data by utilizing the data collection templates. Because this was the first inventory,

data collected by the OPDIV GHG Managers was inputted into the FEMP Workbooks as well as the compiled by the HHS GHG Manager. The HHS GHG manager and reviewed the data for completeness and errors. Once this review was complete, the HHS GHG Inventory Manager compiled the workbooks into one Department workbook and submitted it for review by the appropriate subject matter experts at the Department level.

Development of the agency's FY 2010 Greenhouse Gas inventory. HHS used a quality assurance validation approach to verify that the inventories are reliable. Each OPDIVS GHG Managers reviewed and verified the data before submitting it to the HHS GHG Manager. Once the inventories were compiled by the HHS GHG Manager, Department-level subject matter experts reviewed the inventory and corrected any errors. Because some of the second party reviewers were not independent of those responsible for reporting the GHG emissions, HHS submitted an inventory management plan.

The biggest challenge in completing the inventory was finding and gathering the data using limited resources while balancing other Department priorities (e.g., implementing Affordable Care Act). Most OPDIVS require more resources (mostly in time and talent) to complete and maintain the inventory. In addition evolving inventory reporting requirements delayed data gathering from the tribal facilities. HHS views this as an opportunity to strengthen relationships with our tribal partners and remains optimistic that the number of tribally run facilities reporting data for the inventory will increase in the out years.[4]

HHS will continue to use the Goal 2 Work Group and the EMS structure to integrate GHG data collection, inventory management, and reduction strategies into overall planning practices. Through the Goal 2 Work Group, HHS has established future requirements for the GHG inventory and has standardized processes/timelines in order to maintain and manage the inventory. In the future, HHS plans to use a data management system to compile and maintain its inventory. The system is in the prototype/pilot phase. Lessons learned from the FY10 inventory are being incorporated into the requirements process. This system should enable HHS to shift from quality assurance to second-party verification for FY12 inventory because the Energy Managers at the Department would be able to remain independent of those responsible for reporting the GHG emissions.

Other, as defined by Agency: HHS is not reporting additional scope 3 emissions at this time.

d. Positions - The majority of the participants in the Goal 2 Work Group are on collateral duty. This Goal is particularly challenging to staff given the unique mission of HHS, diversity of the scope, the complexity of methodologies, and the breadth of implementation strategies. This category requires that the employees have a general, interdisciplinary background in administration and science, a position that is not easily classifiable using the current occupational position standards[5].

[4] Public Law 93-638 and Executive Order 13175 require an agency consult with the tribes regarding policies that have tribal implications.
[5] The Classifiers Handbook, U.S. Office of Personnel Management

e. Planning Table

SCOPE 3 GHG TARGET	Units[6]	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	…	FY 20
Total Scope 3 GHG Emissions (Comprehensive) **(Federal Target)**	MMT CO2e	297	360	360	350	350	340	…	320
Total Scope 3 GHG Emissions (Subject to Agency Scope 3 GHG Reduction Target) **(HHS Target)**	MMT CO2e	297	360	360	350	350	340	…	320
Overall Agency Scope 3 Reduction (reduced from FY08 base year **(HHS Target)** [7]	%	+3.9	+20	+20	+18	+18	+16	…	+11
Other, as defined by agency	%	NA	NA	NA	NA	NA	NA	…	NA

f. Agency status - Using the inventory as a reference, HHS reduced emissions in business ground travel despite a significant growth in employee population. This reduction could be attributed to an increase in the use of web-based collaboration tools and teleconferencing. HHS will continue to offer programs and initiatives that will reduce scope 3 emissions and promote healthy lifestyles. These programs range from offering transit subsidies to flexible schedules/places. The flexible schedule/places, primarily telework, program participation has remained steady. The Goal 2 Work group plans to share the results of the commuter survey with the HHS Office of Human Resources and build a partnership to implement future behavioral strategies aimed at increasing use of flexible schedules/places, particularly telework. The increased use of telework is a key strategy in reducing scope 3 emissions. Lastly, many offices within HHS have recycling and energy efficiency programs that conserve resources and reduce the overall consumption of materials. For example PSC and NIH recycle nearly 48% and 30% of waste, respectively.

g. Return on Investment – HHS has not canceled or delayed any Goal 2 initiatives. Recently the PSC, a shared services organization, awarded a blanket purchase agreement that will begin to modernize the way it does business. As a technical solution, the One Stop Service (OSS) project will encompass modern IT practices and platforms (both hardware and software). The OSS will also provide an integration server and workflow server to allow for custom workflows to be developed against any data provider used by PSC – past, present or future. This electronic platform will provide PSC customer the option for electronic documentation. By FY20, the PSC anticipates that more than 25,000,000 pages will be saved from being printed and mailed, which is equal to approximately 3200 trees and will help save the PSC, HHS, and its federal customers $2 million.

[6] GHG emissions are measured in mtCO2e and the percentage reductions are reductions in mtCO2e.
[7] Refer to the OFEE Scope 3 GHG Emissions Reduction Target Tool and User's Manual for detailed descriptions of each scope 3 categories and calculation methods. When writing narrative for this goal area, please note that it is not necessary to provide a great deal of detail. Agencies should focus on general strategy for reducing Scope 3 emissions and should plan to provide greater detail on milestones and actions taken to reduce emissions associated with agency-specific targets in subsequent updates to this plan.

h. Highlights – As previously described HHS recently conducted a commuter survey. The survey results indicate a confidence level of 95% and a margin of error of 0.7%.[8] This data will provide a more accurate depiction of federal employee commuting habits. The challenge for HHS will be setting appropriate reduction targets for each OPDIV. These targets will have to balance mission requirements while encouraging a change in business/management culture during a time of mission expansion. To highlight one such challenge, the larger OPDIVS (CDC, FDA, IHS, and NIH) comprise approximately two-thirds of federal employee population. Because the majority of the assigned employees perform hands-on patient care and laboratory work, it is highly likely that a considerable number of employees may not be eligible for regular recurring telework. This creates a situation where the other smaller OPDIVS will have to set more ambitious reduction targets than they may have initially desired. Some of these OPDIVS have experienced or are experiencing significant increases in personnel leaving little room for target fluctuations.

[8] Population = 83,745; Sample = 16,515

GOAL 3: High-Performance Sustainable Design / Green Buildings & Regional and Local Planning

a. Goal Description -High-Performance Sustainable Design / Green Buildings

The largest environmental impacts from HHS mission activities are associated with siting, construction and operation of building assets. To help mitigate those impacts, HHS has incorporated the high-performance sustainable design requirements of the "Guiding Principles for High Performance and Sustainable Buildings" (GP) in the HHS Facilities Program Manual. HHS Policy for Sustainable and High Performance Buildings was issued in September 2006 and incorporated into the HHS "Sustainable Buildings Implementation Plan." The SBIP was updated in April 2011 (as the "Sustainable Buildings Plan" (SBP)), to incorporate Executive Order 13514 requirements.

Attainment of the goals and targets in the SBP will significantly reduce energy, water and materials use, GHG emissions and waste generation, consistent with the goals of this plan. Additionally, HHS is developing science-based indoor environmental quality (IEQ) criteria that will supplement the current GP and LEED® requirements. Each sub-goal below includes a description of current SBP targets and/or focus, along with gaps the Department intends to address in the next year.

***(a) Beginning in FY20, all new Federal buildings that enter the planning process are to be designed to achieve zero-net energy by FY 2030*.** HHS will comply with this requirement in new buildings and build-to-suit leases. The definition of zero-net energy buildings has been added to the HHS SBP, as have interim targets (based on EISA) for increasing energy efficiency and reducing fossil-fuel generated energy use. See the April 2011 HHS SBP for more information.

***(b) Comply with the "Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings" in all new construction, major renovation or repair and alteration of Federal buildings*.** HHS will comply with this requirement in new buildings, major modernizations and build-to-suit leases. Under the scope of this policy, HHS defines major renovation projects as improvement projects[9] which have a total project cost equal to or greater than $10 million and/or impacting 40% or more of the overall floor area. Construction and improvement projects with a total project value equal to or greater than $10 million and improvement projects impacting 40% or more of the overall floor area (60% for housing) require third party certification that meets the requirements of a multi-attribute green building standard or rating system developed by an ANSI-accredited organization. Requests for waivers, based on life-cycle costs, operational feasibility or technical application, must be approved by the HHS Senior Real Property Officer. All existing owned buildings and direct leases will be assessed and compliance with the GP. See the April 2011 HHS SBP for more information.

(c) Assess and demonstrate that at least 15% of agency's existing government-owned buildings, agency direct-leased buildings, delegated authority leased buildings, and

[9] Improvement projects include renovations and alterations as defined in the HHS Facilities Program Manual, Volume I, Section 2-1 that do not add new program space.

FRPP-reported leased buildings meet Guiding Principles by FY 2015 [5,000 GSF threshold for existing buildings and building leases]. The highest HHS priority at this time is the incorporation of the GP into existing owned buildings. Due to limited availability of funds and the relatively small quantity of office space occupied by HHS, we anticipate that this goal will not be met on the basis of total number of buildings. The current milestone for 2015 is to achieve compliance within 27.8% of total square footage. Mission-related or regulatory limitations also make achieving substantial compliance with the GP problematic for certain types of HHS facilities, including historic properties and laboratories. Waivers for specific GP elements may be necessary for mission-related reasons such as avoiding daylighting in radiology suites. NIH will achieve compliance in two thirds of their existing buildings, once they are certified under LEED® for Existing Buildings: Operations & Maintenance (EBOM), as permitted for projects registered prior to October 1, 2008. See the April 2011 HHS SBP for more information.

***(d) Demonstrate annual progress toward 15% conformance with Guiding Principles for entire building inventory by 2015, and 100%, thereafter*.** HHS will continue to make annual progress toward 15% conformance with GP for our entire building inventory by 2015, and 100%, thereafter. Agency policy and planning for new facilities and leases, and lease renewals incorporates GP requirements to the greatest extent practicable, subject to the waiver process described in the April 2011 "HHS Sustainable Building Plan." Milestones for compliance of the baseline inventory (based on FRPP), is reported below. See the April 2011 HHS SBP for more information.

(e) Incorporate sustainable practices into agency policy and planning for new Federal facilities and leases, and into lease renewal strategies. HHS has updated its "Real Property Asset Management Plan" and is continuing to update the "HHS Facilities Program Manual" to incorporate sustainable practices. Commissioning, Value Engineering, Metering and Leak Detection were identified as the highest priority and have been updated. Additional sections are under review. HHS will continue to work with GSA to incorporate GP into lease actions. See the April 2011 HHS SBP for more information.

***(f) Demonstrate use of cost-effective, innovative building and sustainable landscape strategies to minimize energy, water and materials consumption*.** Requirements for cost-effective, innovative building and sustainable landscape strategies to minimize energy, water and material consumption through sustainable design practices and requirements are being implemented. As part of the 2010 HHS SBP update, the Sustainable Building Checklists were updated to reflect the requirements of E.O. 13514, including capturing innovative building strategies where applicable. See the April 2011 HHS SBP for more information.

(g) Operate and maintain, and conduct all minor repairs and alterations for existing building systems to reduce energy, water and materials consumption in a manner that achieves a net reduction in agency deferred maintenance costs. HHS will operate and maintain, and perform all minor repairs and alterations for existing buildings and systems in a manner that reduces energy, water and materials consumption and achieves a net reduction in agency deferred maintenance costs through the sustainable management and maintenance of existing buildings systems. The Operations and Maintenance Section of the HHS Facilities

Manual is being updated to incorporate this policy. See the April 2011 HHS SBP for more information.

(h) Optimize performance of the agency's real property portfolio –dispose and consolidate excess and underutilized property, co-locate field offices, consolidate across metropolitan and regional locations. HHS will optimize real property portfolio performance, dispose and consolidate excess and underutilized property, co-locate field offices, and consolidate across metropolitan and regional locations, as funds become available.

HHS space acquisition actions will be aligned with all agency goals under Executive Orders 13514 and 13327, "Federal Real Property Asset Management." All new leases, new construction and major space alteration projects shall investigate and provide opportunities for increased location efficiency and reduction in emissions associated with employee commuting, through cooperation with local officials. A reference was added to the 2010 update of the HHS SBP to emphasize consideration of opportunities to reduce environmental impacts. A policy for optimization of office space has been issued, setting the utilization rate target of 170 useable square feet per person, on average, for all office and office support space. See the April 2011 HHS SBP for more information.

(i) Reduce need for new building and field office space by utilizing technologies to increase telework opportunities and expand delivery of services (over the internet or electronically). HHS is leading by example with supportive telework and flexible workplace policies by utilizing technologies to increase telework opportunities and expand electronic delivery of services. See telework discussion under Regional and Local Planning, below, and in SSPP Goal 2 Section GHG reduction plans.

***(j) Ensure use of best practices and technology in rehabilitation of historic Federal properties*.** Historic HHS properties will be conserved, rehabilitated, and reused, using current best practices and technology. In addition to existing policy within the HHS Facilities Program Manual, language was incorporated into the April 2011 HHS SBP. HHS will incorporate the recently published ACHP guidance on "Sustainability and Historic Federal Buildings" into the HHS Facilities Program Manual update of the Historic Preservation policy.

***(k) Align agency space actions (new leases, new construction, and consolidation) with agency Scope 1&2 and Scope 3 GHG reduction targets*.** Where possible, and in cooperation with regional and local official, HHS will work towards increased location efficiency and reduction in GHGs associated with all of our operations. To promote consolidation, HHS has established an updated utilization rate policy for office and office support space at 170 useable square feet per person on average. The CDC Buildings and Facilities Office has an in-house transportation planner, instrumental in coordinating, supporting and promoting a number of successful transportation initiatives at the CDC. CDC is a Platinum Level Partner with the Clean Air Campaign, to educate personnel on transportation choices including walking, bicycling, riding mass transit, vanpooling, carpooling, teleworking, and compressed schedule days off.

Goal description - Regional and Local Planning

(a) Incorporate consultation with local and metropolitan planning organizations regarding the impact, or potential impact, of Federal actions on local transportation infrastructure and local development plans into existing policy and guidance.
Requirements for such consultations will be incorporated into HHS guidance and policies. The existing HHS NEPA process already includes consultation on these impacts and plans.

(b) Align agency policies to increase effectiveness of local planning efforts regarding transportation, energy resources and the environment. HHS is working to ensure that planning for new federal facilities or new leases increases the effectiveness of local planning efforts regarding transportation, energy resources and the environment, including consideration of sites that are pedestrian friendly, near existing employment centers and accessible to public transit. The HHS Sustainable Buildings Plan requires all projects and lease actions to consider the Department of Transportation, Housing and Urban Development, the Environmental Protection Agency and the General Services Administration's "Recommendations on the Sustainable Siting of Federal Facilities," issued April 5, 2010.

(c) Increase effectiveness of regional measures that enhance integrity of local ecosystems and watersheds. HHS is developing strategies for significant agency participation in local and regional energy, transportation, watershed, and ecosystem planning. These are included under item (d), below.

(d) Update agency policy and guidance to ensure that all Environmental Impact Statements (EIS's) and Environmental Assessments (EA's) required under the National Environmental Policy Act (NEPA) for proposed new or expanded Federal facilities, and as appropriate, identify and analyze impacts associated with energy (including alternative energy sources) and climate change. HHS has begun to identify and analyze impacts, including those on health and climate change, from energy usage and alternative energy sources in all Environmental Impact Statements and Environmental Assessments for proposals for new or expanded Federal facilities under the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.). While guidance on this topic is still in draft ("Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions"), except for categorical exclusions, all new, proposed HHS facility expansions are covered under an EIS or EA. Energy efficiency is addressed in the HHS Sustainable Building Plan and climate change adaptability is being addressed in this SSPP and elsewhere in the Department. All HHS NEPA coordinators are engaged as new guidance comes out from the CEQ. HHS has requested funding to review and update NEPA policy in FY12 and 13.

(e) Integrate methods and practices necessary to achieve the goals of this plan into agency master planning documents (i.e., high-performance, sustainable building goals, pollution prevention and waste reduction goals, water use reduction goals, sustainable acquisition goals, electronic stewardship and data center consolidation, etc.). HHS is reviewing Section 3-1,"Facilities Master Planning," of the HHS Facilities Program Manual to incorporate these requirements to ensure Department –wide integration of these methods and practices. This will be done in coordination with OPDIV master planning efforts that have already implemented strategies to meet many of these goals.

(f) Update agency policy and guidance to ensure coordination and (where appropriate) consultation with Federal, State, Tribal and local management authorities regarding impacts to local ecosystems, watersheds and environmental management associated with proposed new or expanded Federal facilities. HHS sustainability checklists for large facility construction and renovation projects also include requirements for project alignment with regional efforts and goals established by OPDIV Environmental Management System for impact reductions. HHS is updating agency policy to ensure Department –wide integration of these methods and practices.

(g) Discuss agency participation in critical local and regional efforts and initiatives (i.e., Executive Order on Chesapeake Bay Protection and Restoration, Executive Order on Stewardship of the Ocean, Our Coasts, and the Great Lakes, etc.). In the coming year, HHS will identify and participate in critical local and regional efforts and initiatives to support ongoing efforts.

b. Agency lead for goal

(a) For High-Performance Sustainable Design / Green Buildings - Assistant Secretary for Administration (ASA)/Office for Facilities Management and Policy (OFMP).

(b) For Regional and Local Planning - ASA/OFMP and the ASA/ Office of Intergovernmental Affairs (IGA).

c. Implementation methods

(a) For High-Performance Sustainable Design / Green Buildings

1. HHS policy, procedures, guidance and tools designed to record the Department's program to incorporate High - Performance Sustainable Design / Green Buildings measures into building assets are defined in the April 2011 HHS SBP. See the SBP for updated implementation methods and accomplishments of HHS Landholding and non-Landholding Operating Divisions.
2. Ongoing efforts include:

    i. Developing training and communications plans to support the SSP Department-wide goals and the HHS Sustainable Buildings Plan, including 1) General Employees, 2) Line Managers and Executives, and 3) Specific Job Series or Position Training, including facilities managers and O&M staff.

    ii. Connecting positive health outcomes to facility design and operation by developing science-based, risk analyses to reevaluate current standards and practice. This will help to provide a credible basis for incorporating social and environmental factors into Return on Investment (ROI) calculations. Health in Buildings Research Initiatives include:

    - Looking for innovative solutions to promote human health in the built environment, based on scientific research, through the "Health in Buildings Roundtable," an interdisciplinary group chaired by NIH. The Roundtable will help to identify factors relating to human health, including use of potentially toxic

building materials that are lacking in existing green building rating systems, such LEED®. Plans include developing a database on built environment impacts on human health and establishing metrics for their measurement, and developing business models for positive ROIs, based on positive health outcomes.

- HHS Region V and GSA is also filling the human health gap in existing green building rating systems through mitigation of negative indoor environment impacts on tenants and creation of features that promote physical activity and healthy lifestyle choices. The group envisions a certification system to promote positive health outcomes.
- The Healthy Community Design Initiative within the CDC's National Center for Environmental Health is dedicated to understanding and improving the relationship between community design and public health. Currently work is being done to identify partners for a cooperative agreement that will increase the knowledge and capacity for Health Impact Assessments across the US.
- NIH has developed protocols for remediation and tracking of contaminants during facility decommissioning and deconstruction, which have been incorporated in the new AIHA/ANSI Laboratory Decommissioning standard.
- NIH conducts bio-environmental research to improve indoor air quality while saving energy in bio-medical laboratories and animal research facilities. The results of these studies have been cited and adopted as national and international standards for labs and hospitals.
- NIH's research project on health impacts of artificial lighting systems, and research and development of programmable LED lighting systems to mimic the natural color spectrum and diurnal cycles of daylight could bring the health benefits of daylighting to interiors of existing buildings while reducing energy use and heat generation.
- NIH's comprehensive mercury reduction policy and program is being implemented across HHS. This program is aimed at eliminating all uses of mercury in facilities by increasing general awareness of mercury hazards, encouraging use of safer alternatives, and preventing spills.

(b) For Regional and Local Planning

i. As part of the training program described above, OFMP and the OPDIVS will establish training for regional office leadership, as well as talking points and best practices.

ii. Regional Directors will identify and connect with region-wide networks of sustainability-minded organizations to promote the HHS commitment and raise awareness of the health benefits associated with the program.

iii. HHS will explore opportunities for collaboration between existing Federal Executive Boards (FEB), Excellence in Government activities, and HHS Sustainability awards programs, including establishing a Health and Sustainability Award associated with the goals of this Goal.

iv. Regional lease listings will be generated by renewal dates, to facilitate consolidation and collocation of facilities. A letter of intent explaining the HHS Sustainability Plan and sustainable lease clauses, targeted at building owners managed by GSA or HHS Program Support Center (PSC), will also be developed.

A 10-year timeline will be established for all GSA and PSC-managed buildings, to incorporate requirements as leases are renewed or established. Ideally, strategic regional planning for new projects and expiring lease space will give preference to mass transit/rail, mixed-use locations.

v. The PSC Transhare program will continue to work with other mass transit subsidy providers to increase program participation.

vi. HHS is promoting alternative work arrangements such as teleworking. Expanded focus on a regional hoteling policy and telework policy should dramatically reduce environmental impacts.

d. Positions

Currently, HHS does not have resources available to adequately staff the High-Performance Sustainable Design / Green Buildings and Regional and Local Planning Program. At HHS Headquarters (OFMP), sustainable buildings responsibilities are assigned to the Chief Architect for Sustainable Facilities, who has other, additional responsibilities related to oversight of OPDIV and STAFFDIV operations. All OPDIVs and STAFFDIVs have a designated representative on the Sustainable Buildings Workgroup. CDC's Sustainable Buildings Coordinator is also the CDC Portfolio Manager, two separate sets of responsibilities. CDC's Energy Manager also serves as a Fire Protection Engineer. These functions are handled similarly, elsewhere, where this is typically a collateral function and less than 50% of staff time is dedicated to implementation. IHS addresses these responsibilities as collateral functions, equivalent to approximately 1.5 to 2 FTEs. Due to staffing shortages and uncertainty regarding future hiring, it is not possible to create a position solely to manage and implement the Sustainable Buildings Program. IHS' mission is to raise the physical, mental, social, and spiritual health of American Indians and Alaska Natives to the highest level. While sustainable buildings practices are essential and consistent with the IHS mission, the primary IHS staff focus remains health care and related public health services.

As workload increases with ever changing technology and expanding regulatory, data collection and reporting requirements, a full time Sustainable Buildings Coordinator, at a minimum, is required in each of the landholding Operating Divisions. Similarly, within OFMP at least one person should be dedicated full time for the oversight, policy and leadership in the Sustainable Buildings Program. In non-landholding Operating Division the role of a Sustainable Buildings Coordinator could most likely be met through a partial FTE.

e. Planning table

SUSTAINABLE HIGH PERFORMANCE BUILDINGS (Buildings (by GSF) Meeting Guiding Principles)	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	…	FY 20
Owned Buildings **(HHS Target)**	%	3.6 %	5.0 %	11.6 %	18. 9%	22. 2%	27. 8%	…	?%
FRPP-Reported Leased Buildings **(HHS Target)**	%	0%	0%	0%	0%	0%	0%	…	0%
Total Buildings **(HHS Target)**	%	3.1 %	4.3 %	10. 0%	16.3 %	19. 1%	23. 9%	…	?%
REGIONAL AND LOCAL PLANNING									
Other, as defined by agency	TBD	TBD	TBD	TBD	TBD	TBD	TBD	…	TBD

Because 2020 is beyond the current 5-year budget planning cycle, we have no data to support goals for incorporating GPs by that year. All non-IHS, FRPP-reported leases were awarded prior to GP issuance and will therefore not be in compliance. IHS leases with Tribes reported to FRPP are subject to rights of self-governance and compliance is not mandatory.

(a) For High-Performance Sustainable Design / Green Buildings - An agency-specific report generated from MAX Collect that includes Resource/Investment Information for goal areas covered in the Sustainability Plan will be attached at Appendix 1. Agency reports will include approved appropriations levels for FY10-11 and FY 2012 request levels from the President's Budget.

HHS currently projects 27.8% of gross square feet (GSF) will meet the GP in 2015. The compliance target, calculated on the projected 2015 baseline inventory of 605 assets totaling 31,458,790 GSF, is based on square footage of buildings rather than the number of individual buildings. The projected compliant square footage represents 6% of HHS buildings (37 total). HHS does not expect to achieve the 15% goal for individual buildings by 2015, primarily due to constraints in anticipated construction funding that limit our ability to carry out the major modernizations required to bring our inventory of existing buildings into compliance. Additionally, HHS' facility modernization costs are substantially impacted by the nature of work being carried out in them, especially high containment laboratories, hospitals and clinics.

(b) For Regional and Local Planning – We are identifying opportunities to develop healthy building and site criteria to our facilities and campuses that connect to communities and support local and regional planning efforts. Program under consideration include the CDC National Center for Environmental Health's "Health and Healthy Places" program, LEED-Neighborhood Development (ND) program, and the U.S. Departments of Transportation and Housing and Urban Development, and U.S. Environmental Protection Agency's "Partnership for Sustainable Communities" program.

f. Agency status

(a) HHS semi-annually captures and reports performance in implementation of the GP into its inventory through update of the OMB Environmental Scorecard, which is available on the OMB website. Progress is updated annually in the SSPP and SBP. The baseline inventory is evaluated annually to capture the most current data after the FRPP upload (See SBP Exhibit I.B.1 "HHS Summary of Owned and Leased Buildings"). A draft version of the July 2011 "Energy & Sustainability Scorecard" that identifies planned actions and milestones covering January through June 2011 is attached.

(b) Planned programs, efforts and initiatives within HHS components to achieve agency targets:

i. HHS is an advocate for smart design and construction of buildings to create healthy and productive work environments for Federal tenants in our owned and leased facilities. Efforts to achieve sustainability goals in leased space are hampered by GSA's leasing practices and "Green Lease" language that do not support the Department's goals.

ii. HHS promotes alternative commuting options to employees to reduce GHG emissions relating to commuting.

g. Return on Investment

HHS prioritizes facility and planning initiatives and efforts, based on the lifecycle return on investment (ROI), in accordance with OMB Circulars A-4, Regulatory Impact Analysis (RIA) and A-94, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, applicable tribal consultations, and Executive Order (EO) 13514; which requires consideration of economic, environmental, social, and mission-related costs and benefits, to the greatest extent possible. See the Pollution Prevention and Waste Section of this SSPP for an example of how health impacts of materials can be considered in ROI, and how our understanding of these impacts, backed by rigorous, science-based research, can enable us to take action now to reduce those negative impacts. There are, however, major challenges associated with achieving this goal:

(a) A comprehensive, integrated, cost/benefit analysis approach to accomplish the comprehensive sustainability goals of EO 13514 across the HHS portfolio would allow the Department to focus resources where they would have the greatest overall impact. EO 13514 addresses the major impacts of federal operations, such as natural resource and ecosystem services use, and identifies goals for reducing negative impacts. The EO includes a federal green-building rating system (the "Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings") that requires 100% compliance with certain individual building characteristics as a measure of progress towards overall sustainability, as well.

Unfortunately, because 100% GP compliance in individual buildings is given priority over effective, portfolio-wide policies and strategies, there is often a conflict between pursuing the most efficient way to bring the largest number of buildings into GP compliance and investing limited resources in portfolio-wide strategies that will have the

greatest long-term effect. HHS is exploring means to capture and demonstrate the level of GP compliance across the building portfolio.

(b) OMB's guidance for cost/benefit and return on investment analysis includes the present value of capital and operating costs and benefits over the life of the material or program and future capital replacement and financing costs. This approach explicitly omits impacts of upstream factors before acquisition and downstream factors after disposal, which can have major costs and impacts, particularly environmental and social. These factors, known as "externalities" can occur across wide geographic distances, or especially across time, and are particularly difficult to both identify and price. While life cycle assessment (LCA) is encouraged, its use is extremely limited, and little guidance has been developed.

The traditional practice of Cost-Benefit-Analysis (CBA) as a decision-making tool does not result in sustainable choices because it does not account for potential costs and benefits of actions that do not have monetary values and because it limits the criteria for decision making, often avoiding valuable perspectives and interests of broader stakeholder groups. Empirical analyses comparing the realized costs and benefits of projects to previously estimated values have revealed frequent inaccuracies. Cost-benefit analysis favors things that can be easily priced. It is relatively easy to measure benefits from industry and jobs, but benefits from healthy ecosystems and well-functioning social institutions are much more difficult to measure.

(c) Conventional life cycle cost analyses that assume that virtually every environmental and social aspect associated with an investment decision can be identified and priced do not always support public health priorities and policies, which consider factors such as health benefits and quality of life. And, when discounting is applied to things that are not easy to price, they can jeopardize sustainability by favoring actions in the present, whose less-than-fully-understood cost impacts are mainly in the future. A comprehensive, sustainable ROI analysis will look beyond short-term budgetary analysis practices, and consider a Multi-criteria analysis approach that facilitates the use of both qualitative and quantitative measurement scales, making it possible to address multidisciplinary problems involving consequences on the environment and public health issues.

HHS has several initiatives underway to improve our understanding of the impacts of the built environment on human and environmental health:

i. The NIH Health in Buildings Roundtable is looking for innovative solutions to promote human health in the built environment, based on scientific research. It plans to establish metrics for the measurement of built environment's impact on human health; develop business models with positive ROIs, based on positive health outcomes; and, develop a database on the impact of the built environment on human health and well-being.
ii. HHS Region V is working with GSA to fill the existing gap in existing sustainability rating systems, such LEED®, in the area of indoor environment impact on building occupants and creation of features that encourage tenants to

engage in physical activity or make other healthy lifestyle choices. The group envisions a certification system that would recognize incorporation of these concepts and features that promote positive health outcomes.

h. Highlights

HHS High-Performance Sustainable Design /Green Buildings accomplishments and challenges are detailed in the April 2011 "Sustainable Buildings Plan." Overall, HHS is making operations more efficient and prioritizing facilities investments that will result in long term conservation of energy, water and other resources. We are consolidating our operations in modern, more efficient buildings, and where possible, removing inefficient assets from our inventory. The Department is also striving to improve the health of those who work in, visit, and occupy our facilities by connecting design and operational decisions to positive health outcomes.

One example is the Healthy Community Design Initiative within the CDC's National Center for Environmental Health, which is dedicated to understanding and improving the relationship between community design and public health. Currently work is being done to identify partners for a cooperative agreement that will increase the knowledge and capacity for Health Impact Assessments (HIA). HIA helps decision-makers avoid adverse health consequences and costs, and improve health. HIA may also reduce environmental injustices by characterizing opportunities to improve the relationship between affected vulnerable groups and the policy or project.

Finally, checklists developed for use in the HHS "Sustainable Buildings Plan" have been adopted for use by other federal agencies, including the U.S. Department of Agriculture. They include:

- Exhibit II.B.1 – Sustainable Buildings Checklist for Projects,
- Exhibit II.B.2 – Sustainable Buildings Checklist for Lease Actions,
- Exhibit II.B.3 – Letter of non-Conformance, and,
- Exhibit II.D.1 – Existing Buildings Assessment Tool.

GOAL 4: Water Use Efficiency and Management

a. Goal Description

HHS has revised the potable water reduction targets to a water use intensity reduction of 21% by FY 2020 as compared to the FY 2007 baseline year which is still less than the EO 13514 goal of 26%. Water use trends of each OPDIV were analyzed and new goals were established. In FY 2012 and 2013, significant water reductions are expected due to the implementation of a project at the NIH Bethesda Campus in Bethesda, MD. From FY 2013 to FY 2020, each OPDIV is estimated to reduce water use intensity by 2% per year through additional water efficiency projects and the implementation of leak detection programs starting in FY 2014. However, changes in scientific mission and laboratory testing could impact the Department's ability to meet the forecasted future water intensity goals.

No industrial, landscaping and agricultural water use was reported in FY 2010 by the OPDIV. Therefore, HHS has not developed non-potable water use policies or guidance. The planning table in section "e" does not reference ILA usage or savings, because it is not reported. In the future, additional meters may be installed. If new meters are installed, the usage will be reported in the future and plans will be made to reduce usage by 2% per year per the statutory requirements.

Water reuse strategies are being identified in the EISA Section 432 water audits that are being conducted on all of the HHS facilities. Where economically feasible, these strategies will be incorporated into projects or operations and maintenance procedures.

HHS will continue with water efficiency training to assist water personnel with the identifying and implementation of water use technologies. One class was held for the OPDIV water managers in December 2010 in which water reuse applications were covered. Additional training for environmental engineers and landscaping engineers needs to be conducted to improve water intensity usage in ILA consumption

The current HHS Sustainable Building Plan (SBP) requires compliance with EISA 2007 and is proactive in addressing stormwater management as a compliance requirement under the Guiding Principles.

HHS has incorporated appropriate reduction strategies for non-potable water use into the HHS SBP where it addresses landscaping and irrigation strategies, as well the employment of design and construction strategies that reduce stormwater runoff and polluted site water runoff.

b. Agency Lead

Assistant Secretary for Administration (ASA)/Office for Facilities Management and Policy (OFMP)

c. Implementation Methods

Potable Water

At the HHS headquarters several actions have taken place to improve water efficiency:

- As a result of the HHS SSPP, a water management workgroup was formed to coordinate efficiency efforts throughout the Department. The workgroup consists of the water managers of each HHS OPDIV, and the key support personnel. Meeting weekly, this workgroup has been able to establish primary goals and objectives to meet not only the greenhouse gas reductions goals, but those of EO 13514 and EISA 2007. The workgroup will continue to meet weekly in FY 2011, and at least bi-weekly in FY 2012.
- HHS headquarters coordinated a water efficiency training course in December 2010 for the water managers and technical personnel throughout the HHS OPDIVS. The course focused on water efficiency strategies for laboratories and hospitals and outlined auditing procedures. HHS is working to develop Energy and Water Audit Training in FY 2011 with the goal of training in-house staff to perform EISA2007 required audits on Covered Facilities. The plan is to have the course replicated in two different locations in FY 2012.
- HHS developed a water leak detection policy in FY 2010. Development and implementation of leak detection and repair programs will be a primary method used by HHS to meet reduction requirements. Most HHS facilities do not have robust leak detection and repair programs. With implementation of this program and the application of new technologies, it is anticipated that water leak losses can be reduced to less than 10% and significant water use reductions can be realized.
- HHS updated the facility metering policy to reflect current mandates and initiatives. OPDIVS will update facility metering plans in FY 2011 to outline when and how water meters will be installed. The water meters will enable more accurate estimating in water audits and provide the ability to track consumption accurately.
- HHS focuses efforts on outreach with all employees. Outreach tools used to the promote the goals of the Department include the HHS Green Champion Awards Program, major awareness events for Earth Day and Energy Awareness Month, monthly outreach toolkit on sustainability topic areas, and training. HHS Green Champions Awards will be presented in the third quarter of FY 2011. HHS will develop an outreach toolkit on Energy Efficiency in October 2011 that will have information on water efficiency as well, and a Water Efficiency toolkit for March 2012. The headquarters building will host an energy expo in October 2011 that will also have an emphasis on water efficiency.
- In FY 2011, every water workgroup meeting will include a brief presentation and discussion on new or relevant efficiency technologies.
- OPDIV water measurement charts and scorecards are used to promote discussion and competition amongst the OPDIVS. The charts will be updated at the end of FY 2011.

Specific OPDIV actions in the field that have taken place or are planned are:

- In FY 2010, the fill material in the cooling tower cells at the Hubert H. Humphrey Building was replaced to provide enhanced evaporative efficiency. The fill material had deteriorated and was clogged preventing efficient flow of condensate water and reduced cooling capacity. As a result of the efficiency improvement, the loads on the cooling tower fans and chillers were reduced. The replacement of the fill is estimated to save 76,500 kWh and 535,000 gallons of water per year, for an annual cost savings of $15,070. The project cost $84,196 yielding a simple payback of 5.6 years on the project.

The NIH Bethesda Campus is planning to implement a water efficiency project that would save an estimated 105 million gallons at the central plant in 2011/2012 time frame. This project will install a reverse osmosis system for the boilers. The technology will allow for significant purification of water, thus allowing for less expulsion of waste water. The project will also replace a boiler blowdown water tempering system with a heat exchanger, thus allowing the removal of a domestic water supply system that blends and tempers waste water for release into the sanitary sewer. The estimated project implementation cost is $1,692,641 and the annual savings are estimated at $712,000.

In FY 2010, FDA re-commissioned an abandoned well at the Muirkirk Road facility in Beltsville, MD. The well provides roughly 16,425 MMGal of water each year, which is roughly a 30% reduction in city water consumption. The project is estimated to save $100,000 per year by eliminating line leakage.

The IHS Tucson Area, San Xavier Health Center, installed a xeriscape project to replace the use of potable water on grass with native plants, drip irrigation techniques and decorative rock. The project cost $100,000 and saved 1.3 million gallons of water in FY 2010, which was a 52% decrease in consumption. The total savings of the reduced water use and reduce landscaping labor, fuel and machinery maintenance costs was $12,210, for a simple payback estimated at just over 8 years.

In FY 2010, PSC held the Department's first World Water Day on March 22 to raise employee awareness on water efficiency.

The water efficiency goals are reiterated in the Sustainable Buildings Plan and the HHS Facilities Program Manual Volume II, Section 3-3. The HHS Environmental Management Systems support water efficiency and other sustainability goals in a variety of ways, including formation and coordination of green teams, training, outreach and awareness initiatives.

Industrial/Agricultural Water Use

There are no significant agricultural uses of water at HHS facilities and as a standard practice, most major facilities do not irrigate mature landscaping. In virtually all HHS facilities these uses occur within buildings or are supplied by building water systems and separate metering is not available. HHS faces several obstacles in meeting these requirements and demonstrating compliance on an agency-wide basis. To establish baseline usage and track progress in meeting quantitative reduction targets water used for industrial and landscaping purposes must be metered and monitored separately from other uses. Improving rates of water recycling and reuse may require development of new distribution and treatment systems in existing facilities, which may not be feasible or cost effective. In some cases, limitations of current treatment technology, cross connection concerns and regulatory restrictions may prevent installation of recycling and reuse systems. Where the life-cycle cost effectiveness or water availability concerns justify expenditures for such systems, UESCs or other similar mechanisms will be considered for funding sub-metering, system installation and operation.

Specific OPDIV actions to reduce landscape water use include:

- CDC uses low maintenance plant material, climate appropriate and drought resistant.
- Use of potable water for irrigation is prohibited at CDC. Buildings must provide collection and storage of rainwater and non-laboratory building grey water for irrigation if required.
- CDC buildings collect and store cooling condensate for cooling tower make-up or irrigation.
- CDC posts work site water saving awareness information on the CDC intranet and has developed water use baseline, water use reduction plan and incorporated BMPs.
- The FDA guidelines include provisions to use low maintenance plant species (native turf and wildflowers), and to analyze the use of rain water collection systems for use in lawn irrigation systems. FDA is currently considering the feasibility of a gray water use system at its Jefferson Laboratories Complex. Sustainability Assessments ongoing at FDA facilities will determine the current state of outdoor water and determine the necessary guidelines to incorporate performance targets consistent with the MOU, Epact 2005 and EO 13423.
- The IHS has a policy to use native plants and no outside irrigation. The 2007 IHS A/E design Guide requires designs to earn LEED credit WE 1.1 and where practicable, WE 1.2.
- This guiding principle is largely met by NIH current strategies for installation and maintenance of landscaping, control of grading and runoff from construction sites and increasing use of other low impact development practices. Except in small courtyard areas and healing gardens no permanent irrigation systems are used, and 50 percent of these were eliminated in 2007.
- PSC has installed a water sub-meter at the Parklawn Building to measure irrigation use, and save on sewer costs. PSC facility management eliminated the irrigation to well established areas of English ivy that grows on security berms.

Stormwater Reduction

The EPA technical guidance on implementing EISA Section 438 was incorporated into the April 2011 HHS Sustainable Buildings Plan. The Sustainable Buildings Checklists and the Existing Building Assessment Tool were updated to reflect the technical Guidance. Construction projects are also required to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) storm water management. This compliance includes the application of Best Management Practices (BMPs) and Low Impact Development (LID) strategies for both sediment and erosion control during construction and post construction stormwater management. The CDC and NIH among others represent progressive application of BMPs and LID strategies and include monitoring of adjacent streams when applicable. Other features include green roofs, retention ponds, bio-filters, underground storage, cisterns, rain garden, reforestation, open grid paving (pervious), vegetated buffers, impervious area conversion to green space, open channel swales, overland sheet flow methods (e.g. curbless streets) and tree box filters, storm interceptors and a variety of other pre-manufactured stormwater management devices.

d. Positions

Within HHS, water conservation is also the responsibility of a team consisting of the energy managers and the environmental engineers, building occupants and operations staff. See the scope 1 & 2 goals write up for the discussion of additional positions.

e. Planning Table

HHS does not report ILA water consumption.

WATER USE EFFICIENCY & MGMT	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	..	FY 20
Potable Water Reduction Targets (gal/SF reduced from FY07 base year) **(Federal Target)**	%	6%	8%	10%	12%	14%	16%	..	26%
Planned Potable Water Reduction (gal/SF reduced from FY07 base year) **(HHS Target)**	%	-0.4%	0.5%	4%	7%	9%	11%	..	21%
Industrial, Landscaping, and Agricultural Water Reduction Targets (gal reduced from FY10 base year) **(Federal Target)**	%	-	2%	4%	6%	8%	10%	..	20%
Planned Industrial, Landscaping, and Agricultural Water Reduction (gal reduced from FY10 base year) **(HHS Target)**	%	N/A	N/A	N/A	N/A	N/A	N/A	..	N/A
Other, as defined by agency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	..	N/A

f. Agency Status

In FY10, HHS developed a stronger foundation and plan for achieving EO water reductions and SSPP savings under the structure of the HHS Water Program. The core of the HHS Water Program and structure is the Water Management Workgroup. This team has established priorities and actions plans under the direction of the HHS Energy Officer. Focusing on the completion of comprehensive audits, installation of energy and water meters, automation of data gathering and reporting, training and outreach the workgroup has determined key actions to be completed in order to achieve significant savings.

The workgroup began many of these actions in FY 2010 through the completion on-line training webinars and classroom hours focusing on water reduction and reuse strategies and water auditing procedures. The completion of water audits has been identified as a priority not only to meet EISA auditing requirements, but to identify cost effective water efficiency projects. Additional training on the performance of comprehensive auditing is planned for August 2011 and two more additional dates in FY 2012, in order to train HHS energy personnel to perform in-house audits. Once the audits have been completed specific projects can be planned for

implementation. Implementation of projects will fall primarily under alternative financing projects, as has been seen in FY 2010 and previous years.

OPDIV water metering plans will be updated and the installation of meters will continue in FY 2011 and 2012. In addition, the first submission of the leak detection milestones per the new HHS policy will be submitted by the OPDIVS in FY 2011. These milestones will outline the procedure that the OPDIVS will take to implement leak detection programs in their facilities. Leak detection programs are required to be implemented by FY 2014 and should provide significant water reductions throughout the Department.

The automated data gathering and reporting tools that have been identified will be populated with facility information and specific details. FY 2011, will be the year that the tools set-up and refined, so that in FY 2012 more time can be focused on the implementation of projects.

Outreach has become a focus in FY 2011 and will continue to gain importance in future years. Educating all employees on the goals and initiatives will maximize savings and efficiency. Outreach will work to change employee habits on the use of water, and foster new ideas from the entire HHS workforce.

No industrial, landscaping and agricultural water use was reported in FY 2010 by the OPDIVS. Therefore, HHS has not developed non-potable water use policies or guidance. The planning table in section "e" does not reference ILA usage or savings, because it is not reported. In late FY 2010, two sites reported the installation of irrigation meters and will be reporting ILA. However, the consumption will be minimal.

g. Return on Investment

HHS OPDIVS modify metering plans as the life-cycle cost figures change for specific buildings. In some cases, buildings have been removed from the metering lists and in other cases new buildings have been added. These will be reflected in the update to the metering plans due in June. Additionally, some OPDIVS, such as CDC, have deemed it cost effective to implement all energy meters in a building at one time. Therefore, some electrical meters may not be installed by FY 2012 in order to minimize first cost by installing them with natural gas and water meters in FY 2013.

HHS also has some buildings that are in lease agreements about to expire, planned for major renovation, or to be demolished in the near future, thereby making the implementation of otherwise life-cycle cost effective projects, ineffective. The HHS energy and water workgroups have established a ten-year simple payback as the indicator whether a project is cost effective or not. Those buildings in situations as described above where circumstances will be significantly changed in ten years or less will not have efficiency projects implemented on site.

h. Highlights:

Successes:

- As a result of the HHS SSPP, a water management workgroup was formed to coordinate efficiency efforts throughout the Department. The workgroup consists of the water managers

of each HHS OPDIV, and the key support personnel. Meeting weekly, this workgroup has been able to establish primary goals and objectives to meet not only the greenhouse gas reductions goals, but those of EO 13514 and EISA 2007.

- HHS headquarters coordinated a water efficiency training course in December 2010 for the water managers and technical personnel throughout the HHS OPDIVS. The course focused on water efficiency strategies for laboratories and hospitals and outlined auditing procedures.
- In FY 2010, the fill material in the cooling tower cells at the Hubert H. Humphrey Building was replaced to provide enhanced evaporative efficiency. The fill material had deteriorated and was clogged preventing efficient flow of condensate water and reduced cooling capacity. As a result of the efficiency improvement, the loads on the cooling tower fans and chillers were reduced. The replacement of the fill is estimated to save 76,500 kWh and 535,000 gallons of water per year, for an annual cost savings of $15,070. The project cost $84,196 yielding a simple payback of 5.6 years on the project.
- In FY 2010, FDA re-commissioned an abandoned well at the Muirkirk Road facility in Beltsville, MD. The well provides 16,425 MMGal of water each year, which is roughly a 30% reduction in city water consumption. The project is estimated to save $100,000 per year.
- The IHS Tucson Area, San Xavier Health Center, installed a xeriscape project to replace the use of potable water on grass with native plants, drip irrigation techniques and decorative rock. The project cost $100,000 and saved 1.3 million gallons of water in FY 2010, which was a 52% decrease in consumption. The total savings of the reduced water use and reduce landscaping labor, fuel and machinery maintenance costs was $12,210, for a simple payback estimated at just over 8 years.
- HHS developed a water leak detection policy and updated the facility metering policy to reflect current mandates and initiatives.
- PSC held the Department's first World Water Day on March 22 to raise employee awareness on water efficiency.
- The FDA Irvine Laboratory has a grey water capture and reuse system.

<u>Challenges:</u>

- There are significant gaps in HHS water use data due to the lack of meters (All OPDIV's including non-landholders).
- Building and facilities funding is insufficient to meet all of the existing maintenance and operation needs. Initiatives for water use reduction that are facility-related are in direct competition for funding for repair and improvement projects needed to ensure the proper operation of buildings
- Many of CDC's major buildings were constructed in the last ten years and already incorporate high efficiency plumbing fixtures. Obtaining significant improvement in those buildings will prove difficult.
- Use of 2007 as a baseline year masks significant improvements made previous to that time.
- Some of our facilities are vivariums and it will be extremely difficult to reduce water usage and waste from a facility infrastructure standpoint in these types of facilities. It would require a change in protocol and procedures that could only be initiated by the program and the vets. Additionally, reduction in laboratory facilities would pose similar issues. Simple

measures such as low flow toilets and waterless urinals can be instituted, but the savings from instituting these measures is very limited.

- The ability to accurately measure water within the IHS OPDIV poses several challenges. Many IHS facilities move in and out of tribal ownership every few years, most facilities are in small areas where obtaining accurate water use data from the local water authority is difficult, and in many cases meters are not present. IHS facility management is continuing to work on how to manage or correct these challenges.
- The Parklawn lease extension was signed late in FY-09 for three years and two one year options in preparation of final award of a new 15 year lease. The Government is in the process of turning in approximately 447,000 square feet of the Parklawn Building. This will have a huge impact on our Water/GSF figures and water intensity usage.

GOAL 5: Pollution Prevention and Waste Reduction

a. Goal description

In support of Pollution Prevention and Waste Reduction (P2WR), HHS will focus on the following top 3 activities over the upcoming 12 months:

1. Improve waste data tracking for solid waste diversion consistent with SSPP P2WE Goals
2. Implement HHS mercury reduction policy and continue to develop Toxic Reduction strategies (e.g. building materials)
3. Increase diversion of compostable items from the waste stream

Goal 5a	Increase source reduction of pollutants and waste:
Goal 5b	Divert at least 50% non-hazardous solid waste by 2015
Goal 5c	Discuss agency strategies to reduce municipal solid waste sent to landfill and how implementation will assist the agency in achieving FY 2020 GHG reduction targets
Goal 5d	Divert at least 50% Construction and Demolition (C&D) materials and debris by FY 2015
Goal 5e	Reduce Printing Paper Use,
Goal 5f	Increase use of uncoated printing and writing paper containing at least 30% post-consumer fiber;
Goal 5g	Reduce and minimize the acquisition, use and disposal of hazardous chemicals and materials and discuss how implementation will assist the agency in achieving FY 2020 GHG reduction targets;
Goal 5h	Increase diversion of compostables and organic materials from the waste stream ;
Goal 5i	Implement integrated pest management and landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals and materials;
Goal 5j	Increase use of acceptable alternative chemicals and processes;
Goal 5k	Report in accordance with Sections (301-313) of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986

b. Agency lead for goal

- The Assistant Secretary for Administration, Deputy Assistant Secretary, Office for Facilities Management and Policy,
- Director, Division of Programs (DP) and
- Director, Division of Planning and Construction (DPC)

c. Implementation methods

HHS has a variety of policies and programs in place to assist with addressing pollution prevention and waste elimination goals, these include:

- HHS General Administration Manual Chapter 30, Environmental Protection (GAM 30)
- HHS Facilities Program Manual Volume I *(FPMV)*
- Sustainable Building Implementation Plan (SBIP)

- Affirmative Procurement Plan (APP)
- Electronic Stewardship Plan (ESP) (under revision, to be replaced by new Electronic Stewardship Policy document)
- Environmental Management System (EMS)
- Strategic Sustainability Performance Plan (SSPP)
- 2011 Mercury Policy "Policy Restricting Procurement, Use, Storage and Disposal of Mercury and its Compounds on HHS Facilities"

The following table provides a cross walk of these policies as they relate to Goal 5:

HHS Policies Addressing Goal 5 Pollution Prevention and Waste Reduction									
GOAL		GAM 30	FPMV	SBIP	APP	ESP	EMS	SSPP	Hg Policy
Goal 5a	Increase source reduction of pollutants and waste:	X	X				X		X
Goal 5b	Divert at least 50% non-hazardous solid waste by 2015, excludinng C&D Debris							X	
Goal 5c (NEW)	Discuss agency strategies to reduce municipal solid waste sent to landfills…								
Goal 5d	Divert at least 50% Construction and Demolition (C&D) materials and debris by FY 2015			X				X	
Goal 5e	Reduce Printing Paper Use,					X			
Goal 5f	Increase use of uncoated printing and writing paper containing at least 30% post-consumer fiber;				X				
Goal 5g	Reduce and minimize the acquisition, use and disposal of hazardous chemicals and materials;	X	X						X
Goal 5h	Increase diversion of compostables and organic materials from the waste stream ;								
Goal 5i	Implement integrated pest management and landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals and materials;	X	X	X					
Goal 5j	Increase use of acceptable alternative chemicals and processes;	X	X		X		X		X
Goal 5k	Report in accordance with Sections (301-313) of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986	X							

These existing policies, plans and procedures are updated as needed and form a strong basis for addressing these and other sustainability goals. Additional goal implementation will be pursued through updates and guidance documents to reflect the latest Executive Orders and data call requirements

Environmental Management Systems: The Office of the Secretary began implementing a Higher Tier EMS in 2009. The EMS has been integrated into the SSPP through the various workgroups leads that meet regularly.

The HHS higher tier EMS incorporates office focused EMS (for headquarters, regional offices and non-landholding ODIVs) and EMS's with organizational and facility components at the landholding OPDIVS – CDC, FDA, IHS and NIH.

Of note this period is the IHS Environmental Management System which was revised to better serve the IHS mission while also maintaining the critical elements of ISO 14001:2004. The revised EMS plan supports the new draft IHS Environmental Compliance, Stewardship, and Sustainability policy and the HHS SSPP. Ongoing aspects of the IHS Hierarchical EMS plan include:

- **Environmental Audits** - Environmental Audits are continuing throughout the IHS. **Environmental Awards -** to recognize individuals and groups for their environmental sustainability efforts and to increase outreach and visibility for sustainability initiatives.
- **Sustainability Commissioned Officer Student Extern Program (COSTEPS)** – initiated an annual student recruitment tool to provide staff support for sustainability initiatives.
- **Sustainability Projects** - The IHS Environmental Steering Committee is drafting a policy which will allow sustainability-related projects to be considered for funding through the environmental remediation project process.
- **Sustainability Education Workgroup** – anticipates development of two levels of course to address IHS sustainability related training needs.
- **Sustainability Website** – A sustainability website is under development to communicate sustainability-related information to both IHS staff and the general public.

The Department continues leveraging existing EMS at the OPDIVS and promotion of Green Teams.

Sustainable Building Implementation Plan (SBIP): The HHS SBIP addresses construction debris and requires all new construction and major renovation projects to set targets for reducing the amount of C&D materials and debris generated by a minimum of 50%.

HHS Affirmative Procurement Policy: This policy supports reduced use of toxics, increased use of biobased products and other pollution prevention and waste minimization concepts.

(NEW) HHS Electronic Stewardship Policy: This new policy will be implemented in 2011 and will include duplex printing requirements to help reduce energy and paper costs and waste.

(NEW) HHS "**Policy Restricting Procurement, Use, Storage and Disposal of Mercury and its Compounds on HHS Facilities"**: Based on the success of the National Institutes of Health (NIH) Mercury Reduction Policy, the HHS Environmental Managers developed a Department wide policy that will be effective in 2011.

Solid waste recycling is implemented to various degrees at across HHS Operating Divisions. Additionally, there is increased effort for the diversion of compostable and organic materials from the waste stream, which will be expanded at HHS facilities as technologies and opportunities develop. Composting of yard debris is a standard practices and several HHS cafeterias, are working with vendors to replace Styrofoam and other petroleum based cafeteria service items with paper and biodegradable service items that are conducive to composting.

The Implementation of integrated pest management and landscape management practices to reduce or eliminate the use of toxic and hazardous chemicals and materials is an accepted standard of practice at HHS facilities.

HHS continuously strives to increase use of acceptable alternative chemicals and processes as well as decreasing agency use of certain chemicals to assist in achieving FY 2020 GHG reduction targets. In 2010 a preliminary list of potential GHG chemicals used in biomedical research was developed for further study in out years as resources permit. In 2011-12 HHS will focus on alternatives to paraformaldehyde for addressing decontamination requirements.

Reporting in accordance with Sections 301-313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 is applicable at some of our landholding OPDIVS and compliance is a standard practice at these facilities. Chapter 30, Environmental Policy, of the HHS General Administration Manual fully addresses EPCRA and other statutory compliance requirements.

d. Positions

Sustainability initiatives intended to meet the goals set forth in Executive Order 13423 and 13514 as well as enhanced HHS stewardship of the environment pose significant challenges and implementation is hampered by limited funding, personnel shortages, personnel turnover and competing priorities.

The expanded responsibilities associated with these initiatives, including the tracking of relevant metrics, exceed the capabilities of a workforce established primarily to maintain compliance. Waste management is not normally a function within the non-landholding OPDIVS which are tenants under GSA or other lease arrangements. Waste management activities including data collection and recycling promotion, is a collateral duty and training for these positions is needed.

CDC Example:

CDC waste management is decentralized and currently covered part-time by several different staff at some 17 campuses with over 300 buildings involving numerous heterogeneous contracts. More than 12 different waste streams with different collection systems and contractor agreements are characterized. Outreach and staff for educational efforts is extremely limited.

CDC estimates at least four additional FTEs and three part-time environmental professionals and technicians are required to significantly boost improvement rates and accomplishments.

Indian Health Service (IHS) Example:

The IHS owns and maintains nearly 2,500 buildings in 240 installations, plus over 2,300 quarters (housing) units at 70 locations. In addition, the IHS operates in 200 direct-lease sites and 70 GSA-leased sites. IHS operations are located in 35 states, mostly in rural and isolated areas.

IHS currently supports the development and implementation of various sustainability and stewardship plans *solely* with staff who have been assigned these tasks as collateral duties. There is no full-time individual in IHS for any of these plans. These collateral duty staff do not receive additional resources to develop or implement plans.

IHS estimates that over 50 collateral duty staff are currently involved in supporting sustainability initiatives and to fully develop and implement plans related to both stewardship and sustainability across IHS, they will require a minimum of one FTE in each of the 12 Administrative Areas and 3 FTEs in headquarters.

FDA example:

FDA has approximately 35 FTEs responsible for the implementation of a decentralized, comprehensive environment, safety and health (ESH) program. Many of these FTE are the sole ESH resource at their location. FDA staff involved with environmental management systems, energy/water management, sustainable buildings, sustainable acquisition, electronics stewardship, and fleet/transportation management do so on a collateral duty basis.

FDA estimates at least two additional FTEs are needed to pursue EMS implementation on an FDA-wide and then location-specific basis since EMS serves as the umbrella for sustainable activities. An FTE to serve as an FDA Sustainability Officer would provide one individual to oversee the implementation of sustainable activities in FDA. Another FTE that could solely focus on sustainable buildings as well as energy/water management would be beneficial to improving sustainable practices and achieving noticeable results.

At headquarters, additional FTE's at both the senior and junior level with broad environmental and planning experience are required at the Office of the Secretary (OS). The OS bears significant responsibility for implementation of the SSPP, including developing and updating policies; researching and developing guidance; developing sensible reporting metrics and data gathering processes; staffing and organizing meetings, and consolidating implementation data for executive level reporting. Currently, there is only a singled dedicated FTE with responsibility for the Department's environmental management program. In addition to increased tracking, reporting and implementation of NEPA, pollution prevention and waste minimization goals, the HHS environmental manager has broad responsibilities across the entire SSPP and its goals.

e. Planning table

POLLUTION PREVENTION & WASTE REDUCTION	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	…	FY 20
Non-Hazardous Solid Waste Diversion Targets (Non-C&D) **(HHS Target)**	%	17	20	25	30	40	50 %	…	50 %
C&D Material & Debris Diversion Targets **(HHS Target)**	%	5	10	20	30	40	50 %	…	50 %
If agency uses on-site or off-site waste-to-energy, estimated total weight of materials managed through waste-to-energy **(HHS Target)**	Tons or pounds	13,051 T	TBD	TBD	TBD	TBD	TBD	…	TBD
Number of sites or facilities with on-site composting programs **(HHS Target)**	#	24	TBD	TBD	TBD	TBD	TBD	…	TBD
Number of sites or facilities recycling through off-site composting programs **(HHS Target)**	#	1	3	TBD	TBD	TBD	TBD	…	TBD
If agency has on-site or off-site composting programs, estimated total weight of materials diverted to composting **(HHS Target)**	Tons or pounds	15,790	TBD	TBD	TBD	TBD	TBD	…	TBD
% of agency-operated offices/sites with a recycling program **(HHS Target)**	%	62	TBD	TBD	TBD	TBD	TBD	…	TBD
If agency offices located in multi-tenant buildings, % of those buildings with a recycling program **(HHS Target)**	%	53	TBD	TBD	TBD	TBD	TBD	…	TBD
% of agency-operated residential housing with recycling programs **(HHS Target)**	%	TBD	TBD	TBD	TBD	TBD	TBD	…	TBD
Other, as defined by agency	TBD	TBD	TBD	TBD	TBD	TDB	TBD	…	TBD

f. Agency status

Solid Waste (Non-C&D)

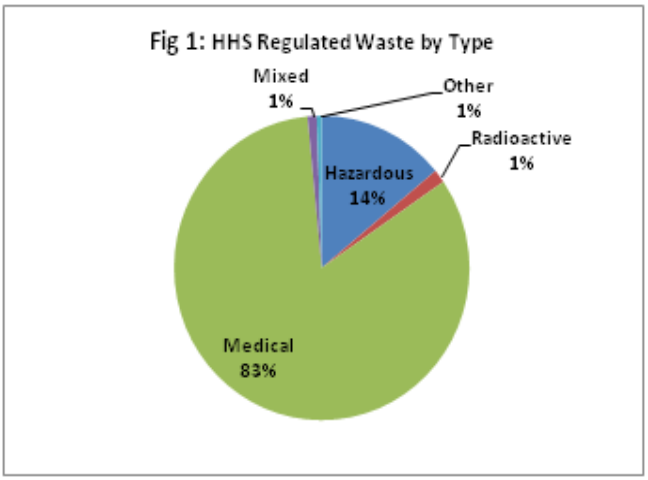
HHS OPDIVS conducted a Pollution Prevention and Waste Reduction Assessment (P2&WR) in 2010 to get a better picture of waste generation and recycling rates, as well as minimization practices and applicable policies and programs. The workgroup is updating and expanding assessment measures for implementation in CY 2011 and will incorporate new metrics such as waste to energy, multi-tenant and residential recycling, on-site/off-site composting operations.

Assessment information was received from 115 owned, operated or leased facilities. Quantitative data was provided by 46% of these facilities which were owned and/or operated.

Hazardous/Regulated Waste:

HHS waste management activity dedicates considerable resources to safe and responsible management of regulated and hazardous waste. Management of these wastes is costly and the inherent higher risk associated with these materials requires priority allocation of limited resources over non-hazardous wastes. Figure 1 shows the various quantities of regulated waste includes the following quantities:

- 2,160 metric tons (MT) Medical/ Pathological waste:
- 364 MT Hazardous waste
- 47 MT Radioactive and mixed waste

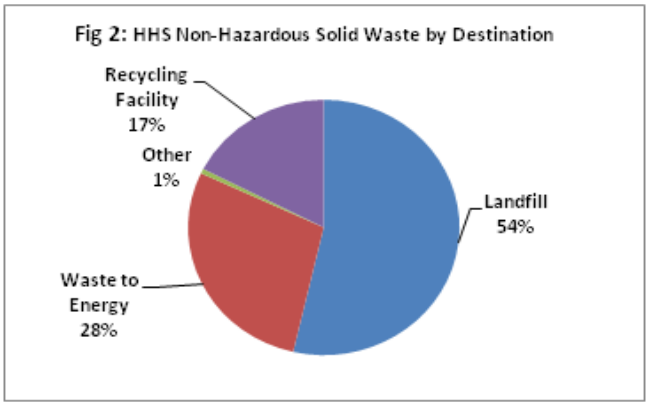


These categories are generated at 18 facilities that are categorized by the Environmental Protection Agency (EPA) as large quantity generators, 26 facilities are categorized as small-quantity generators and 33 facilities categorized as conditionally exempt small quantity generators.

Non-Hazardous Solid Waste:

Recycling programs were reported at approximately 90% of the facilities and 21% of the facilities reported active compost programs. Non C&D Recycling rates (not including composting) varied from 4% to 47% with the overall average of approximately 17%. Total solid waste to landfill (used for Scope 3 calculations) was approximately 26,244 MT and Figure 2 shows the non C&D solid waste disposal by destination.

Solid waste data provided here is still preliminary in nature and will be refined as data collection systems are improved.



C&D Material & Debris:

The HHS Sustainability Buildings Program requires diversion and tracking of C&D waste. Although data from all the OPDIVS is limited, the NIH, CDC and PSC have demonstrated progress.

The NIH campus setting in Bethesda lends itself to a high degree of centralized management control over both solid waste and C&D waste. The NIH, Bethesda C&D recycling rate is 90% (5,611 tons). The NIH pioneered C&D demolition with the development of the Sustainable High Efficiency Deconstruction (SHED)

methodology that combines decommissioning and deconstruction processes and maximizes reutilization of materials and minimizes waste generation. The NIH SHED method led to the *American National Standard for Laboratory Decommissioning* released in 2008.

The PSC manages renovation projects in the 1.2 million sq. ft., Parklawn building in Montgomery County. Twenty tons of carpet from these projects was recycled in CY 2010 however waste data is not available from the renovation contractor to calculate the recycling rate. A new contract for renovation work will include a C&D recycling requirement.
Following CDC update:

At CDC, the newly constructed building 24 is on track for the LEED Gold credit and is committed to recycle a minimum of 75% by weight of the total project's waste stream. Prior to breaking ground, the CDC invited garden groups in and they were able to reuse 50-60 % of the plants. Additionally, during a recent building demolition of an old auditorium, copper, heavy metals, bricks, air conditioning units, and furniture were recycled or reused. Although not written in their contracts, approximately half or more of the furniture vendors recycle their cardboard and packaging materials.

During the this year's demolition of buildings 1Main and 1East at the CDC main campus, a program will be put in place to identify those materials which can be recycled and every effort will be made to recycle as much of the buildings, furniture and fixtures as possible given schedule and cost constraints.

The FDA is not heavily involved in construction at this time and opportunities at IHS facilities are extremely limited as projects are relatively small and dispersed. The CDC construction contracts have incorporated diversion tracking requirements but data is not yet available.

Waste to Energy:

Over 13,000 tons (28%) of solid waste was diverted from landfill to waste to energy. This is the standard practices for HHS facilities in the Greater Washington DC Metropolitan Area.

Composting:

The 2010 HHS survey identified 24 facilities with on-site composting but no estimates for quantity or volume. NIH Bethesda is seeking a commercial composting facility and conducted a site visit to a recently opened facility in Carroll County, MD. If viable and funds permit, the NIH Bethesda facilities plans to divert cafeteria waste for composting in late 2011. The NIH Research Triangle Park (RTP) in NC initiated composting of all cafeteria food waste and the OS at the Hubert H. Humphrey Building (HHH) completed a review of sites and environmental requirements for compost sites and developed an RFP for collection and composting of cafeteria waste. New recycling and compost collection bins are on order and promotional plans are under development. Compost plans are anticipated to be finalized in late 2011 which will culminate a multi-year cafeteria greening effort that incorporates healthy menu choices and reusable and compostable containers.

g. Return on Investment

At HHS, Pollution Prevention and Waste Reduction (P2WR) practices are integrated in our policies, core values and standards of practice. Calculating Return on Investment (ROI) for P2WR can be extremely complex. Not all lifecycle impact costs and benefits can be identified, nor can all health impacts be accurately measured and priced. Often we must base our action on common sense and our current scientific understanding of the negative health impacts from pollution and benefits from prevention.

Notwithstanding the scarcity of HHS specific facility data, the ROI benefits of P2WR are supported by research that connects P2 efforts to a reduction in health impacts and risk. Additionally, costs of waste management and mitigation operations, fines/penalties and other various management aspects can be taken into consideration.

One P2WR-ROI example, which also has global impacts, is the importance of reducing mercury emissions. The World Health Organization (WHO) has found that virtually no one is free from some level of mercury contamination and that this contamination has a disparate health impact on children. According to a National Institutes of Health (NIEHS) analysis using data from the CDC, between 136,588 and 637,233 children each year have cord blood mercury levels associated with lower IQs. This lost intelligence causes diminished economic productivity over a child's lifetime. This lost productivity is the major economic cost of methylmercury toxicity, which approximates $8.7 billion annually. The WHO also estimates that for every kilogram of mercury taken out of the environment, there are up to $12,500 worth of social, environmental and human health benefits.[10]

Although the exact costs are not always quantifiable, the prevention of mercury and other toxic releases will eventually provide a significant ROI.

Based upon the long term historical efforts at NIH to understand the health impacts of mercury, HHS has developed a Department-wide policy for reduction and elimination of this material in HHS operations. NIH's efforts included development of a Facility Decommissioning Protocol, focused on mercury contamination, and simple waste minimization techniques that significantly reduced waste generation and disposal costs.

Some additional P2WP-ROI benefits include the following concepts:

- ***Health and safety risks to workers and the public***: Contamination by pollutants can lead to exposure and injuries to workers and the public, which in turn can impair the organization's productivity and drive up operational costs. EPA has estimated the decontamination cost of for a mercury spill, alone, can range from $1,000 to $200,000.
- ***Benefits of waste prevention***: One example of positive ROI for waste minimization activities at an HHS research laboratory is the reduction of approximately 1,000 lbs of waste from liquid scintillation vials (which are used in radioactive analyses), resulting in an avoided cost of approximately $7/lb.

[10] Mercury Exposure A Silent U.S. health Crisis?", livebetter 2009: No 5
http://livebettermagazine.com/eng/magazine/

- ***Administrative and cleanup costs from environmental endangerment or damage:*** There are potentially substantial administrative and judicial costs associated with most environmental enforcement statues (such as, the Clean Air Act, the Resource Conservation and Recovery Act (RCRA), and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)). Penalties can exceed $27,000/day, in addition to staff time and clean up costs. One past cleanup and enforcement action, at a single HHS facility, cost well over $1,000,000 per year over a period of several years not including the additional costs of staff hours taken away from normal duties to track, document, re-train and conduct follow up compliance activities etc.
- ***Avoidance of negative public opinion and interruption of operations:*** Negative public perceptions of operations and associated litigation are always of great concern. HHS and the Federal Community are charged with an increased emphasis on transparency and the public's legal "right to know". A clear articulation and practice of effective P2WP policies and procedures can avoid litigation and costly interruptions in routine activities, as well as, provide reassurance and evidence that community and environment health are a priority at HHS.

h. Highlights from the OPDIVS

CDC

Diversion of non-hazardous waste:

- The Styrocyclers installed in 2009 are still up and running to reduce and recycle Styrofoam waste.
- Expansion of lab recycling program - CDC is progressively expanding this program to the newest lab building on a floor by floor basis. Each floor shares an autoclave room and the goal is to have lab recycling setup in each lab building at the main campus.
- CDC established a pallet recycling program in 2010 resulting in 256 pallets recycled Sept – Dec 2010
- The pilot cafeteria composting activity is on hold due to further discussion with cafeteria vendor and the local Composting Facility was forced to leave the greater Atlanta area due nuisance odor violations.

FDA

Diversion of non-hazardous waste:

- FDA initiated several actions to improve its recycling program at the White Oak Campus, which resulted in an increase from 30 tons of material recycled in FY09 to 111 tons in FY10. This equates to an increase of 27 pounds of recycled materials per person from FY09 to FY10 and data will be reported on the follow up waste assessment when requested by headquarters later 2011.

Reduce Toxics/Green Procurement

- FDA's Office of White Oak Services (OWOS) collaborated with GSA to green the cafeteria services and house keeping services contracts. Contractors performed assessments of all cooking, cleaning, servware and housekkeeping products and replaced with green, biodegrable substitutes and/or "Green seal" products.

IHS

Policy Development:

- Developed "Chapter 13: Environmental Compliance, Stewardship, and Sustainability" of the IHS Health Manual which incorporates aspects of Executive Order 13514, the HHS Strategic Sustainability Performance Plan (SSPP) which is expected to become official policy in FY11.
- Developed the Sustainability Advisory Board (SAB) Charter – the SAB which includes all IHS staff involved in HHS sustainability workgroup and their respective office directors will support the IHS Chief Sustainability Officer (CSO).

NIH

Diversion of non-hazardous waste and C&D

- FY2010 NIH Bethesda recycling diversion rate was 35% and an 80% NIH wide estimated C&D recycling rate. Held a recycling/waste reduction competition among buildings and desk-side recycling bins through green teams.
- Revamped Bldg 31 cafeteria recycling and provided outreach training to patrons and replaced all Styrofoam with paper.
- Research Triangle Park (RTP) in NC composted all cafeteria food waste

Reduce use of common pollutants

- Replaced phosphoric acid with citrus based caged wash cleaners, new custodial contract requires use of bio-based and Green Seal certified products, reduced photo development chemicals by replacing X-rays with digital imaging equipment and removed lead-containing autoclave tape from NIH stores.
- Instituted no mow zones to reduce pollutants from storm water runoff and conducted compliance monitoring of construction sediment and erosion control activities.

Reduce paper use

- NIH Bethesda Bldg 10 Library purchased two new scanners and promotes scanning in lieu of printing; also installed print monitoring software that tracks all network printing.
- NIH Bethesda promoted reduced paper use as a goal in all green team meetings
- First Paper Free Day held at NIH Bethesda – one institute (Fogarty International Center) shut down all printers for one day.

- Increased duplex printing at National Library of Medicine, Office of Research Facilities and the National Eye Institute, Bethesda.

Increase recycled content product use

- NIH stores and warehouse 'greened' numerous product lines and promoted green purchasing through green team meetings and use of new electronic tracking of environmental attributes.
- Green purchasing training was providing for all P-card holders NIH wide.

Reduce hazardous chemicals and materials

- Updated list and tracking of NIH Priority Chemicals through the EMS and used green team and Sustainable Lab Groups to promote hazardous chemical reductions, the use of MIT web based Green Chemicals Alternative Purchasing Wizard and less toxic lab products at two 2010 Green Fairs.

OS

Waste Diversion and Composting

- The U.S. Department of Health & Human Services Program Support Center (PSC) at the Parklawn Building was awarded the 2010 Business Outstanding Achievement in Recycling Award by Montgomery County Maryland. This award is given to businesses and organizations for their outstanding efforts in implementing or improving their recycling, waste reduction or buying recycled programs.
- The PSC increased its solid waste diversion rate for calendar year 2010 from 46% to 48% for the Parklawn building. The PSC also recycled 20 tons of carpet.
- HHH building inaugurated a 'green' cafeteria with healthier menu choices and all biodegrable food service items.
- The HHH building also has begun upgrading its recycling program beginning with reinitiating cardboard recycling and replacing 2000 desktop containers (for mixed paper). New signage and central recycling containers are in the works for later CY 2010.
- An RFP has been released for cafeteria composting services as a continuing phase in the HHS green cafeteria activity.

GOAL 6: Sustainable Acquisition

a. Goal description

Ensure 95% of new contract actions, including task and delivery orders under new contracts and existing contracts, require the supply or use of products and services that are energy efficient (Energy Star or FEMP-designated), water efficient, biobased, environmentally preferable (excluding EPEAT-registered products), non-ozone depleting, contain recycled content, or are non-toxic or less toxic alternatives.

Update agency affirmative procurement plans (also known as green purchasing plans or environmentally preferable purchasing plans), policies and programs to ensure that all mandated federally designated products and services are included in all relevant acquisitions.

b. Agency lead for goal

The HHS lead for Sustainable Acquisition goals is the Assistant Secretary for Financial Resources (ASFR), Office of Grants and Acquisition Policy and Accountability (OGAPA).

c. Implementation methods

Policies and Procedures – In FY 2011, HHS is developing a Sustainable Acquisition Policy Memorandum (APM) to implement the following:

- **Green Reporting and Tracking Procedures --** The mandatory input of green purchasing data into the Departmental Contracts Information System (DCIS) will facilitate the tracking, measurement and reporting of the 95% metric of applicable new contracts and sustainable acquisition thresholds for HHS Agency Sustainability Plans and Federal Environmental Scorecards, e.g., the OMB Sustainability Scorecard.
- **Evaluation of Sustainable Acquisitions** – The addition of sustainable actions as an evaluation factor for applicable solicitations. Ensure 95% of all new contracts, including non-exempt contract modifications, require products and services that are energy-efficient, water-efficient, bio-based, environmentally preferable, non-ozone depleting, contain recycled-content, non-toxic or less-toxic alternatives.
- **Sustainable Acquisition –** HHS is amending the HHS Acquisition Regulation (HHSAR) to implement Executive Order 13514, Federal Leadership in Environmental, Energy and Economic Performance. The intent of the APM is to leverage agency acquisitions to foster markets for sustainable technologies and energy efficient and environmentally sustainable materials, products, and services.
- **Incorporation of a Solicitation Provision and Contract Language** – Requires OPDIVs and STAFFDIVs to incorporate a standard green solicitation provision clause into all applicable new contract actions above the micro-purchase threshold.

HHS' Affirmative Procurement ("green purchasing") Plan (APP) details the guidelines and procedures for green purchasing and encompasses the acquisition and use of designated recycled

content, energy efficient, environmentally preferred, Energy Star, Electronic Product Environmental Assessment Tool (EPEAT)-registered, bio-based, water efficient, and non-ozone depleting products and services and alternate fuel vehicles and fuels.

In FY 2011, HHS will update its Affirmative Procurement Plan (APP) to incorporate Executive Order (EO) 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," which requires federal agencies to advance sustainable acquisition to ensure that 95% of all applicable new contract actions for products and services, with the exception of acquisition of weapon systems, are energy efficient, water efficient, biobased, environmentally preferable, non-ozone depleting, contain recycled content, or are non-toxic or less toxic alternatives, where such products and services meet agency performance requirements.

Training and Outreach – HHS OPDIVS will continue to provide training and outreach to the acquisition workforce to keep them abreast of new green procurement requirements and re-enforce existing regulations. The HHS Purchase Card Guide and online training course provides purchase card holders and approving officials with guidance and resources for the effective use of purchase cards for green purchasing. The HHS Strategic Sourcing website provides best practices and tips for utilizing Departmental contracts for Information Technology, Laboratory Supplies, Office Equipment, Office Furniture and Office Supplies to meet green procurement goals.

d. Positions

At the headquarters level, there is 1 FTE assigned to manage the Green Procurement function. Each OPDIV has assigned a Green Procurement Manager (GPM) to work with the Head of the Contracting Activity (HCA) to implement green purchasing activities. The green purchasing duties are collateral duties at the headquarters and field levels.

e. Planning Table

SUSTAINABLE ACQUISITION	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	…	FY 20
New Contract Actions Meeting Sustainable Acquisition Requirements **(HHS Target)**	%	N/A	95%	95%	95%	95%	95%	…	95%
Energy Efficient Products (Energy Star, FEMP-designated, and low standby power devices) **(HHS Target)**	%	N/A	95%	95%	95%	95%	95%	…	95%
Water Efficient Products **(HHS Target)**	%	N/A	95%	95%	95%	95%	95%	…	95%
Biobased Products **(HHS Target)**	%	N/A	95%	95%	95%	95%	95%	…	95%
Recycled Content Products **(HHS Target)**	%	N/A	95%	95%	95%	95%	95%	…	95%
Environmentally Preferable Products/Services (excluding EPEAT – EPEAT in included in Goal 7) **(HHS Target)**	%	N/A	95%	95%	95%	95%	95%	…	95%
SNAP/non-ozone depleting substances **(HHS Target)**	%	N/A	95%	95%	95%	95%	95%	…	95%

SUSTAINABLE ACQUISITION CONTRACT REVIEW	**1st QTR FY 11**	**2nd QTR FY 11**	**3rd QTR FY 11 (Planned)**	**4th QTR FY 11 (Planned)**
Total # Agency Contracts	12,336	8,434	10,000	15,000
Total # Contracts Eligible for Review	1,109	623	700	1050
Total Contracts Eligible Contract Reviewed (i.e., 5% or more eligible based on previous OMB guidance)*	55	76	70	74
# of Compliant Contracts	55	74	70	74
Total % of Compliant Contracts	100%	97%	100%	100%

f. Agency Status

Implementation of the HHS Sustainable Acquisition policy will facilitate the systematic collection of green purchasing data and lessen the OPDIV/STAFFDIV administrative burden as it relates to measurement of the 95% sustainability metric and meeting the sustainable acquisition threshold for HHS Agency Sustainability Plans and Federal Environmental Scorecards, e.g., the OMB Sustainability Scorecard.

Assessment and Monitoring - HHS has incorporated an environmental component into its Procurement Management Reviews (PMRs) that assess the strengths, weaknesses and best practices of the acquisition function. PMRs will now address compliance with the 95% green purchasing requirement and the effectiveness of each OPDIV sustainable procurement program. In FY 2011, HHS will conduct 3 PMRs at the following OPDIVS: CMS, IHS, and CDC. In FY 2012, HHS will also conduct PMRs at 3 additional OPDIVS.

HHS has also added a sustainable acquisition performance metric to the HHS Acquisition Dashboard, which measures OPDIV performance across a spectrum of acquisition related areas. The performance indicator "95% percent of all applicable sustainable acquisitions" will be measured on a quarterly basis beginning 3rd quarter FY 2011.

g. Return on Investment

HHS has no significant sustainable acquisition projects or initiatives included in the submission of last year's SSPP that have been deliberately cancelled or suspended due to a lower than expected ROI or expanded due to higher than expected (ROI).

h. Highlights

Sustainable Acquisition - As part of its long term objective of strengthening the FDA base of operations, the Office of Information Management (OIM) set a goal of increasing the percentage of high efficiency servers from 25% to 50% in FY2010. As of April, 2011, 98% of FDA servers are high-efficiency-energy star compliant. The FDA Office of Acquisition and Grants Services' (OAGS) IT Division supported OIM's objectives with a series of strategic contracts and orders for servers, related equipment and software totaling $9.3 million. Many of these purchases allowed OIM to replace older, less efficient machines with equipment that met or exceeded current Energy Star standards. OAGS ensured that all of these acquisitions contained appropriate green purchasing clauses and made "compliance with all green standards" an element in the overall source selection decision by using a low-price-technically-acceptable evaluation scheme.

Policy and Procedures - The CDC Procurement and Grants Office (PGO) published their Green Procurement Policy in July 2010. This policy was developed to respond to laws and regulations requiring a comprehensive CDC-wide plan to acquire recycled content, energy efficient, and bio-based products whenever they are cost effective and meet technical requirements.

Training and Outreach - OGAPA held a symposium in April 2011 focused on educating and enriching stakeholder and customer knowledge in the acquisition, grants and small business areas. The symposium included green presentations on understanding sustainable acquisitions and biopreferred purchasing given by federal subject matter experts.

Discuss how contracts identified in the table above were selected for review.

Each OPDIVS Head of Contract Activity (HCA), in concert with their respective Green Procurement Managers, determined the number of applicable contract actions by selecting actions for which green products could be supplied or used. Once the applicable contract actions were selected, a minimum of 5% of those contracts were manually reviewed to determine whether they included requirements for green products and/or services for which green products could be used.

7. GOAL: Electronic Stewardship and Data Centers

a. Goal Description

Ensure acquisition of EPEAT registered, ENERGY STAR qualified, and FEMP designated electronic office products when procuring electronics in eligible product categories.

HHS has surpassed its goal of ensuring that 95% of agency electronic products are EPEAT-registered. As a department, HHS currently ensures 97% of its computers are Energy Star qualified.

HHS is 3% shy of its goal of ensuring 100% of agency computers and monitors are Energy Star qualified. As a department, HHS currently ensures 97% of its computers are Energy Star qualified. HHS is establishing an Electronic Stewardship Policy to extend the useful life of agency electronic equipment.

HHS is currently documenting the compliance with FEMP-designated products; however, with the majority of acquisitions being EPEAT-registered or ENERGY STAR qualified, the majority of acquisitions will also be FEMP-designated.

Establish and implement policy and guidance to ensure use of power management, duplex printing, and other energy efficient or environmentally preferred options and features on all eligible agency electronic products.

HHS is establishing an Electronic Stewardship Policy to track and enable power management, duplex printing, and other energy-efficient or environmentally preferable features on all eligible agency electronic products.

The elements of the Electronic Stewardship Plan and the Electronic Stewardship Implementation Plan (May 2007) are being incorporated into the Electronic Stewardship Policy. As such, the Electronic Stewardship Policy should be the document that is referenced, and not the Electronic Stewardship Plan and the Electronic Stewardship Implementation Plan.

Currently, HHS has enabled power management on 72% of eligible PCs. In order to meet the deadline of 06/30/2011 in completing this metric, HHS is implementing numerous solutions across the OPDIVS that have not met this metric. All OPDIVS across HHS have committed to meeting the June 30 deadline for implementing power management on 100% of eligible devices.

Update agency policy to reflect environmentally sound practices for disposition of all agency excess or surplus electronic products.

HHS is 1% shy of having 90% of its electronic devices / products disposed of using environmentally sound practices. Each member OPDIV is working to find vendors capable of utilizing sound practices to dispose of electronic devices/products.

HHS is establishing the Electronic Stewardship policy to reflect environmentally sound practices of all agency excess or surplus electronic products. This policy and its Appendices cover all sound practices for disposition of all agency excess of surplus electronic products.

Discuss how the agency will increase the quantity of electronic assets disposed through sound disposition practices. Include in the discussion how your agency is using or plans to use programs such as disposal through GSA Xcess, recycling through Unicor, donation through GSA's Computer for Learning (CFL) or other non-profit organizations, and/or recycling through a private recycler certified under the Responsible Recyclers (R2) guidance or equivalent certification.

HHS is 1% shy of having 90% of its electronic devices / products disposed of using environmentally sound practices. Each member OPDIV is working to find vendors capable of utilizing sound practices to dispose of electronic devices/products.

The majority of HHS already disposes of electronic assets using sound disposition practices. For the most part, HHS already disposes of electronic assets using either Unicor donation or through recycling through a private recycler certified under the Responsible Recyclers (R2) guidance or equivalent certification. The remaining electronic assets are difficult to dispose due to remote locations and inaccessibility to the proper disposing resources. Currently, if an OPDIV cannot dispose of electronic assets themselves, they will dispose through ITIO. For the remote locations, HHS is determining how to dispose of these electronic assets appropriately and cost-effectively.

Discuss how the agency will require IT planning/Life Cycle Manager to replace and or waive equipment that does not meet "Green" compliance requirements.

If it is determined that a certain class of or usage of equipment is deemed ineligible due to security, or other sensitive or mission critical reasons, a written justification shall be submitted to the OPDIV CIO, HHS OCIO or their designated delegates with an explanation as to why the equipment should be considered ineligible and, if applicable, what actions will be taken to correct the issues and when they will be completed.

Settings that interfere with the intended purpose and use of an individual electronic device may be disabled on a case-by-case basis as required to ensure proper functionality by support organizations, staff delegated with that authority by the OPDIVS, or HHS OCIO.

Update agency policy to ensure implementation of best management practices for energy efficient management of servers and Federal data centers, including how the agency will meet data center reduction goals included in the Federal Data Center Consolidation Initiative.

HHS has developed a data center management policy with the focus to enable achievement of the HHS consolidation goals in OMB's Data Center Consolidation Initiative (DCCI) and to satisfy environmental and energy directives and requirements associated with HHS data centers. The policy sets standards and thresholds for sever and rack utilization, server virtualization, data center temperature, green procurement, etc. The policy was ratified on

March 22, 2011. We are working with HHS data center managers to ensure all data centers comply with the policy.

b. Agency lead for goal

Assistant Secretary for Administration (ASA)/Office of the Chief Information Officer (OCIO)

c. Implementation methods

The HHS Electronic Stewardship and Data Center Working Group (ESWG) has identified three priorities to focus on this Fiscal Year:

- Policy,
- Data (Metrics), and
- Active implementation of power management settings on 100% of eligible PC, Laptops, and Monitors

Policy

The Electronic Stewardship (ES) Policy will establish the practices that will a) enhance and expand existing HHS sustainable practices in order to comply with Executive Order (E.O.) 13423 and 13514, b) reduce energy consumption, c) reduce toxics disposal related to electronics, and d) save money through reduced energy consumption and increased electronics life expectancy. The HHS-OCIO Policy for Data Center Management was finalized on March 22, 2011 and will be referenced in the HHS-OCIO ES Policy. The HHS-OCIO ES Policy incorporates the Electronic Stewardship Plan (May 2007) the SSPP, and the Affirmative Procurement Plan (APP), and establishes OPDIV participation in the Federal Electronic Challenge to aid in compliance tracking.

Data (Metrics)

HHS ESWG will develop a means to monitor progress towards the Electronic Stewardship and Data Centers (ES&DC) goals and will initially report to the CIO Council, CTO Council, and the Sustainability Task Force on an interim basis to ensure HHS is on target to meeting established ES&DC goals. The ESWG will provide representatives to participate in the FEC which will aid in this effort. The progress reports will provide the HHS ESWG members an opportunity to review deficiencies and take corrective actions to bring the department's ES efforts back on course.

100% PM Enabled on Eligible Equipment

HHS will ensure Power Management is enabled on 100% of Eligible Laptops, Desktops, and Monitors by sharing best practices so that failing OPDIVS may consider other alternatives and take corrective actions to reach 100% compliance. HHS continues to monitor progress to ensure compliance.

d. Positions

HHS is using existing personnel to support the development and implementation of the electronic stewardship and date center effort. The work performed is being completed by individuals who are primarily responsible for other funded initiatives. This raises major concerns for the Electronic Stewardship workgroup because studies have shown there is only so much a person can absorb and perform within a given amount of time. The ability to successfully implement the Electronic Stewardship and Data Centers goal requires leveraging of existing resources. It is critical that workloads be analyzed, proper consideration be given to priorities, and proper resources levels be provided to supplement priorities if the agency hopes to make Electronic Stewardship a success at HHS.

e. Planning table

ELECTRONIC STEWARDHIP & DATA CENTERS	Unit	May 20, 2011*	FY 11	FY 12	FY 13	FY14	FY15
% of electronic product acquisition covered by current Energy Star specifications that must be energy-star qualified[11] **(HHS Target)**	%	97%	100%	100 %	100 %	100 %	100 %
% of covered electronic product acquisitions that are EPEAT- registered **(HHS Target)**	%	97%	95%	95%	95%	95%	95%
% of covered electronic product acquisitions that are FEMP- designated **(HHS Target)**	%	Unknown	95%	95%	95%	95%	95%
% of agency, eligible PC, Laptops, and Monitors with power management actively implemented and in use **(HHS Target)**	%	72%	100%	100 %	100 %	100 %	100 %
% of agency, eligible electronic printing products with duplexing features in use[12] **(HHS Target)**	%	35%	95%	100 %	100 %	100 %	100 %
% of electronic assets covered by sound disposition practices[13] **(HHS Target)**	%	89%	90%	95%	100 %	100 %	100 %

[11] Device types are the electronic products listed under the Energy Star program that the Agency purchases or leases. This count should include the percentage of products that met energy star standards at the time of purchasing during the reporting period (FY10). Please note it includes products with stand-by power. For the purposes of this metric, Energy Star products are not electronics such as lighting and appliances that are covered by the Sustainable Acquisition Goal. You can go to http://www.energystar.gov/ under "Computers and Electronics" section for the list of targeted products. The goals/targets within Goal 7 are more narrowly scoped to include servers, computers, monitors, peripherals, and other office equipment.

[12] Eligible electronic products include, but are not limited to, imaging equipment such copiers, faxes, printers, scanners, etc.

[13] Electronic assets are generally those electronics products owned and/or leased by the Agency that need to be disposed of in accordance with acceptable end-of-life practices. Some examples of sound

% of agency data centers independently metered, advanced metered, or sub-metered to determine monthly (or more frequently) Power Utilization Effectiveness (PUE). **(HHS Target)**	%	N/A	30%	45%	65%	80%	100 %
Reduction in the number of agency data centers **(HHS Target)**	#	45	41	37	35	35	35
% of agency data centers operating with an average CPU utilization greater than 65%[14] **(HHS Target)**	%	N/A	20%	25%	30%	40%	40%
Maximum annual weighted average Power Utilization Effectiveness (PUE) for agency. **(HHS Target)**	#	N/A	1.8	1.7	1.6	1.5	1.4

* The percentages specified in this column are from our May 20th reporting process.

f. Agency Status

Finalize Data Center Consolidation Plan (Section 2, III)

The HHS Data Center Consolidation plan was delivered to OMB in August of 2010. OMB approved the plan in December of 2010.

Implement a succinct Electronic Stewardship and Data Center Management Policy; and monitor progress throughout the agency

HHS developed two policies, one for Electronic Stewardship and another for the management of Data Centers. The purpose of the ES policy is to provide the framework for the implementation of sound environmental practices in the acquisition, operations and maintenance, and end-of-life management of HHS-purchased electronic products. The purpose of the Policy for Data Center Management (March 22, 2010) is to establish a course of action and define responsibilities for operating data centers efficiently throughout HHS. The primary focus is to enable achievement of the consolidation goals in OMB's Data Center Consolidation Initiative (DCCI) and to satisfy environmental and energy directives and requirements associated with HHS data centers as provided in Executive Orders 13423 and 13514. The establishment of these practices: a) will enhance and expand existing HHS sustainable practices in order to comply with Executive Order (E.O.) 13423 and 13514, b)

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disposition practices include, but are not limited to, GSA Xcess, including transfer to eligible federal entities and donation to eligible states and nonprofits (Note: The use of GSA Auctions, public sales, and abandonment and destruction provided by GSA is outside of the scope of GSA Xcess and does not ensure sound disposition.); recycling through Unicor; donation through GSA's Computer for Learning (CFL) or other non-profit organizations; and/or recycling through a private recycler certified under the Responsible Recyclers (R2) guidance or equivalent certification. Agencies are encouraged to describe in the narrative write-up approximately which percentage is attributed to each disposal method. At this point, the percentage is set by the agency. Agencies should set a target as close to 100% as is reasonably achievable.

[14] In data centers with large variations in load this metric should be applied only to servers that are powered up. Servers that are powered down should not be counted.

may reduce energy consumption, c) may reduce toxics disposal related to electronics, and d) may save money through reduced energy consumption and increased electronics life expectancy. In all aspects of its acquisitions and operations HHS aspires to be a good steward of the earth's resources and a wise manager of the taxpayers' dollar.

These policies incorporate the Electronic Stewardship Plan (May 2007) and Electronic Stewardship Implementation Plan. The Electronic Stewardship policy will be finalized in FY 2011 and the Policy for Data Center Management was finalized in March 2011. In addition to the above, the intent of the policies is to:

- Set precedence and standard for collecting information to determine if HHS is on course in complying with the mandate;
- Facilitate compliance and highlight when HHS has veered off course; and
- Require operating divisions to participate in the Federal Electronics Challenge.

Implement Data Center Consolidation Plan (Section 2, III)

The OMB data center definition has changed significantly since our plan was delivered to OMB in August of 2010. The current OMB data center definition requires a data center to be at least 500 Sq Ft in area. HHS has 45 data centers that meet the new definition. Our plan is to close 10 of them by the end of 2013. Two have been closed already this year. One of which was closed through a cross servicing opportunity with the Department of Interior. This cross servicing opportunity enabled the operations of an HHS data center in Albuquerque, NM to move to a Department of Interior data center in the same city. Two additional HHS data centers are scheduled to be closed this year and the remaining six will be closed in 2012 and 2013.

Develop an Agency-wide Plan to Reduce the Cost and Improve the Efficiency of the Data Centers within HHS (Section IX, c)

HHS has 131 data centers that do not meet the 500+ Sq Ft threshold set by OMB. We are tracking those internally and plan to close 46 of them by the end of 2013.

g. Return on Investment

The establishment of the Electronic Stewardship Policy and the Policy for Data Center Management will

- ensure we comply with the Executive Order (E.O.) 13423 and 13514,
- reduce energy consumption,
- reduce toxics disposal related to electronics, and
- Save money through reduced energy consumption and increased electronics life expectancy.

For Instance, one project worth noting is the migration of Food and Drug Administration's (FDA), Office of Information Management (OIM), datacenter from Rockville, MD to Ashburn, VA. The process of transforming FDA's information systems through the migration to new,

modernized data centers was a high-priority initiative, developed as part of the Information Computing Technologies for the 21st Century (ICT21) program. All FDA Production, Development and Test environments were migrated to new datacenters, which in turn closed down the antiquated Parklawn facility.

The ability to standardize the infrastructure allowed the FDA to achieve 90.2% virtualization utilizing VMware for the windows environment and LDOMs for the UNIX environment. This consolidation effort resulted in a reduction of 110 database servers to 18. Having achieved a high percentage of virtualization reduces the physical footprint in our datacenters thus reducing power and cooling utilization. One state-of-the-art facility in Ashburn, VA, and another at the FDA White Oak Campus provide the high performance and data storage required in today's technology environment, while anticipating a cloud computing platform. The modern, redundant architecture of these data centers protects our systems from internal and external security threats; and, the robust electrical and cooling support systems ensure continuous operations under adverse conditions.

- Tier 4-level production data center environment with a secure FDA computing environment
- Formalized development, test, pre-production/UAT, and production environments
- Utility-based infrastructure service including future cloud computing
- Consistency and standardization through new, standard operational procedures and processes
- The ICT21 Program is improving service, response times, and overall performance

Ashburn Data Center – fully operational as of 10/15/2009

- Pre-Production and Production Environment
- Tier 4 data center in Ashburn, VA
- Facility Reliability: 99.995+% (i.e., 0.4 hours of annual downtime)
- 1.14 MW of redundant power (2N)
- 32 on-site diesel generators (2.25 MW each)
- 32 on-site rotary power systems (1300 kW of critical output each)
- 1.14 MW of redundant cooling capacity
- 5,300 square feet
- Initial power, rack, and HVAC build out for 4,788 1u servers/devices
- Full redundancy and load balancing

White Oak Data Center – fully operational as of 02/01/2010

- Lab, Development, Test, Production file and print, and legacy / non-compliant Intranet
- Tier 3 facility (as defined by GSA)
- Facility Reliability: 99.98% target
- 14,000 square feet
- 1.25 MW power, Central Utility Plant is single point of failure
- 1.25 MW of cooling capacity with only 25% redundancy
- Initial power, rack, and HVAC build out for 8,736 1u servers/devices

Lessons learned and the results of the project have been shared with the HHS Sustainability Task Force, the HHS Electronics Stewardship/Data Consolidation Workgroup and other HHS information technology councils and workgroups. Various portions of this project can be replicated.

h. Highlights

Department-Level Accomplishments (All OPDIVS)

- Established a Department-level Electronic Stewardship Workgroup (ESWG) to discuss progress towards meeting the ES Goals, share lessons learned and best practices on ES activities, and contribute towards workgroup deliverables, such as policy, SSPP, etc. The ESWG contributed to the development of the ES Policy, assisted in the development of reporting mechanism to capture progress towards meeting the sub-goals, contributed to revising the SSPP, and mandated enrollment in the Federal Electronics Challenge.
- Consolidated legacy mainframe workloads and began server virtualization to reduce the number of physical servers.
- Added contract language and engaged procurement officers to only purchase green office supplies as well as EPEAT and Energy Star compliant devices.
- Enabled duplex printing on new and legacy printers, and instituted printing best practices including default black and white printing, toner and print cartridge returns, and no personal desktop printers without justification.
- Instituted green best practices for the office including minimal use of personal fans, heaters and refrigerators, and lighting controls to ensure lights off after 30 minutes.
- Aggressive Power Management campaign to meet mandate of being PM enabled on 100% of eligible devices.

GOAL 8: Agency Innovation and Government-Wide Support

Most of the relatively short term goals of current directives and this plan focus on just attaining sustainability (reduced use of resources and no net degradation of the environment) from HHS facilities and mission activities. Over the longer term attainment of such goals may not ensure the availability of sufficient resources and prevent the public health impacts of scarcity, pollution and climate change. Global trends of rapid population growth and increasing per capita consumption will concomitantly increase environmental impacts and accelerate resource depletion. To adapt, a fundamental shift from sustainability goals toward more aggressive goals of environmental enhancement will be required:

- Energy neutral buildings →*Energy positive buildings*
- Greenhouse gas reduction → *Carbon negativity, sequestration*
- Health protective indoor environments → *Health improving indoor environments*
- Water conservation →*Total water reuse*
- Waste reduction and recycling → *Zero waste, material renovation to higher uses*

HHS recognizes that progress on meeting its current sustainability goals and these longer range objectives of environmental enhancement will require aggressive pursuit of innovations – strategies that have not been previously implemented by others across the Government. These will range from adaptations and new applications of existing innovations from other fields to development of new technologies requiring large investments and extensive research and development efforts.

Examples of sustainability innovations have been presented throughout this plan and this emphasis on innovation aligns with broader HHS and national priorities. The importance of innovation in achieving our national goals was mentioned *eleven times* in President Obama's 2011 State of the Union Address and the drive toward sustainable growth is a primary component of his *Strategy for American Innovation*. Sustainability and fostering innovations to create shared solutions are specific objectives of the *HHS Strategic Plan and Priorities for 2010 -2015*. The Congress is also encouraging green innovations its reauthorization of the COMPETES Act[15]. This law changed the approaches of government agencies to reap the benefits of open innovation strategies by making it dramatically easier for agencies to use prizes and challenges to spur innovation, solve tough problems, and advance their core missions. The law also provided specific funding for development of green technologies.

HHS Sustainability Innovations Working Group. In early 2011 HHS established a new working group to focus on promoting sustainability innovations. The general objectives of the new group include:

- Identifying needs for innovations to meet sustainability goals
- Vetting proposed innovation projects for review by the HHS Sustainability Task Force

[15] Full Name: America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (America COMPETES) Reauthorization Act of 2010.

- Encouraging innovation and development of approved projects by improving awareness and access to incentive programs
- Providing a clearinghouse for tracking HHS sustainability innovation projects
- Promoting the products and applications of successful innovation projects both within HHS and Government-wide.

The working group identified three key processes that will need to be refined and optimized to achieve the above objectives. These are described below:

Priority Setting: Criteria were needed to select projects from the many potential innovations for initial support and tracking by the working group. Criteria for selection and prioritization will include projects that:

- Also support HHS health and human services objectives
- Address multiple sustainability goals
- Have the potential for government-wide applications and wider applications outside government
- Can most rapidly and economically yield deployable products
- Have lower development and deployment costs. Projects that involve creative integration of existing technologies are more likely to meet this criterion than those involving research and development of new technologies

Incentivisation: Provisions of the COMPETES Act and other regulatory changes now allow and encourage government agencies to promote innovations by use of prizes and other incentives. Recognizing these new opportunities, the working group assigned high priority to development and promotion of incentives for sustainability innovations by employees that are "outside of the box" and beyond the scope of their existing duties. Incentives were also needed to encourage others outside the Department to develop innovations needed to meet HHS current and future sustainability goals.

To reduce development time and minimize duplication of efforts, opportunities to incorporate sustainability projects within other existing innovation incentivisation programs were sought. Information on awards, royalties and other incentives applicable to the various phases of innovation was also developed. This is presented in Appendix 5. Examples of existing programs found to be readily adaptable for use in promoting sustainability innovations are described below:

- **CDC iFund.** The CDC Innovation Fund (iFund) was created to enable CDC employees to test new ideas and develop proof-of concept data by providing start up funds for new projects that address CDC public health priorities
- **HHS*innovates***. The HHS*innovates* program is a contest created as part of HHSs Open Government efforts to encourage and celebrate innovations by employees of HHS. The program is aimed at building a culture of innovation at HHS through facilitating the exchange of innovative ideas throughout the Department. This contest seeks not only to recognize and reward good ideas but also to help promote them across the Department.

- **HHS Green Champion Awards.** The HHS Green Champions Awards honor outstanding HHS employees and Native American tribal members involved in various sustainability projects. Recipients of HHS Green Champions awards may also be nominated for the prestigious Presidential GreenGov Awards.
- **NIH Technology Transfer Program.** HHS has designated NIH as the as the lead agency for biomedical technology transfer and intellectual property policy matters for HHS. The NIH Office of Technology Transfer (OTT) assists inventors in obtaining and using tools such as Cooperative Research and Development Agreements (CRADAs) and Material Transfer Agreements (MTAs).
- **Challenge.gov.** The White House and GSA launched www.Challenge.gov, a one-stop shop where entrepreneurs, innovators, and citizen solvers can compete for prestige and prizes by providing novel solutions to tough national problems, large and small. As of this writing, HHS had posted ten challenges on the website, including one sustainability related challenge – development of a Healthy Living Award system for community health innovations.

Sustainability Innovations Data Base: The business case for an innovation project must demonstrate a return on HHS (taxpayer) investments and this requires the determination of the costs and potential benefits attributable to the project. Most business organizations use templates to collect cost benefit information and the types of information usually collected by businesses can be adapted to meet the needs of government sustainability innovation projects. No templates for tracking sustainability innovations and collecting data for establishing business case documentation were found after a literature review. To meet these needs development of a tracking form and a data base to track innovations and their status was prepared and is currently undergoing preliminary testing and evaluation at NIH.

2010 Accomplishments: Innovations achieved in 2010 are reported in the applicable goal related sections of this plan.

2011 Goals: The Working Group has set the following goals for 2011:

1. Expand the group's membership, participation and collaboration with other promoters of innovation within and outside HHS.
2. Review the updated 2011 SSPP with subject matter experts and determine what innovations will be required to meet short and long term goals set in the plan.
3. Publicize innovation needs and incentive programs for promoting the innovations.
4. Populate the Sustainability Innovations Project (SIP) database, begin project tracking and publish a first portfolio of innovations projects.

AGENCY INNOVATION & Government-Wide Support	Units	FY 10	FY 11	FY 13	….	FY 20
Programs, Projects, Initiatives that support Gov-wide efforts **(HHS Target)**		0	1	1		5
Other, as defined by agency **(HHS Target)**		0	10	50		100

Section 3: Agency Self Evaluation

Does your Sustainability Plan incorporate and align sustainability goals, GHG targets and overarching objectives for sustainability with the Agency Strategic Plan?	Yes, but on a limited basis. HHS is at the early stages of incorporating the goals into the HHS mission and culture. We anticipate improvements in this area as the result of our efforts to highlight sustainability and health mission connections via a centralized linkage document. We are also partnering with complimentary initiatives both inside and outside the Department.
Does it provide annual targets, strategies and approaches for achieving the 2015 and 2020 goals?	Yes, we have targets established at the HHS level for both FY2015 and FY2020. We are working to hone our strategies and approaches as we move forward by breaking down Department level goals to the Operating Division level while allowing for individual/localized implementation plans. We are also seeking to continue to hone better integration with existing structures/communities including research and development, hospitals, health care, grants, and internal management functions into our strategies.
Is the Sustainability Plan consistent with the FY2012 President's Budget?	Not entirely. While sustainability considerations have been included in the budget process, the goals and targets identified in the SSPP cannot be accomplished within the anticipated budget. Internally, to be successful in meeting the established FY2011 goal, we need to better leverage alternative funding sources and contract strategies, as well as reexamine our master planning and sustainable return on investment (SROI) schemes. The reality is that the most influential sustainable projects and initiatives require significant upfront costs. Current budget mechanisms do not allow for such long term investments. Partnership with our internal health program components will be critical in moving forward. As an agency, we are excellent at considering the health of the American people. We need to use the same lens to look internally and set the example regarding sustainability and health connections. HHS will continue to advance and strive towards these sustainability goals through leveraged collaborations, investments and innovative funding solutions.
Does the Sustainability Plan integrate all statutory and Executive Order requirements into a single implementation framework for advancing sustainability goals along with existing mission and management	Yes, the HHS SSPP integrates statutory and Executive Order requirements into a single framework. However, while we are making significant strides toward reducing our environmental footprint, the practicality of fully achieving all of these goals is limited due to 1) conflicts between different directives that

goals, making the best use of existing and available resources?	hinder clear prioritization of work; and, 2) the considerable time and effort required to meet often duplicative reporting requirements that divert limited resources for actually planning and carrying out the work. While progress is being made, conflicting priorities and evaluation criteria from OMB, CEQ, and DOE need to be resolved. Different measurements and reporting areas include: our bi-annual OMB Environmental Scorecard, our annual SSPP, the "Guiding Principles for Federal Leadership in High Performance Sustainable Buildings" ("Guiding Principles"), internal HHS Strategic Plan priorities, etc. With the exception of the "Guiding Principles" requirement, EO 13514 has established a workable number of clear, thoughtful goals to actually move towards sustainability, with the SSPP as the reporting/evaluation mechanism. This integrated, Department/Portfolio-wide approach, rather than the individual buildings focus of the Guiding Principles, is the logical way to proceed. HHS is challenged in balancing the significant internal and external planning and reporting requirements with actual implementation and evaluation of its strategies. Without a more streamlined and strategic reporting process, or more dedicated staff, we may not be able to provide guidance and service beyond meeting the mandatory reporting.
Does your plan include methods for obtaining data needed to measure progress, evaluate results, and improve performance?	Yes, the plan does include metrics and some overarching strategies to evaluate data and improve performance. But is it meaningful, timely data? Will the data we are collecting help advance the sustainability objectives? Unfortunately, at this time, with our focus on planning and reporting, we are unable to answer these questions, nor do we have feedback loops in place to implement, evaluate and improve performance. Accuracy of data has been one of the more challenging areas of plan implementation, specifically for Scope 1 and 2 emissions. With more emphasis and oversight on many of its metrics, HHS has discovered numerous discrepancies in square footage and utility numbers from one data source to the next. To ensure correct baseline data and continued accuracy moving forward, HHS is implementing more effective quality assurance procedures. IT system limitations are a major challenge for data collection. Systems used for facilities management, security, and human resources vary throughout the Department, resulting in limited

	interoperability and often inconsistent data. To help collect and analyze sustainability data, we developed/acquired an inventory tool, Green Gauge, in 2010. We are still in the early stages and the system is not yet integrated with existing structures but we look to implement the system on a limited basis across the Department in the next year. HHS does have milestones and measureable targets to evaluate results at the Department level; however, it has not yet broken requirements down to specific divisions for all goal areas. This will be critical in moving forward, as analyzing data and improving performance will need to driven by individual HHS divisions.

Other Key Questions for 2011:

1. ***Did your agency meet by the 12/30/10 due date and/or is it now able to demonstrate comprehensive implementation of the EO 13423 Electronic Stewardship goals?***

Acquire at least 95% EPEAT-registered electronics
Yes, HHS has met the goal of acquiring at least 95% EPEAT-registered electronics. Currently, HHS has surpassed that goal and has acquired 97% EPEAT-registered electronics.
Enable energy star or power management features on 100% of eligible PCs
While HHS did not meet the 12/30/2010 deadline for enabling power management features on 100% of eligible PCs, we continue to make strong strides toward this goal, improving by 27% in the last 6 months. HHS will continue to engage senior leadership and subject matter experts to attain 100% compliance.
Extends the life and/or uses sound disposition practices for its excess or surplus electronics
HHS extends the life and/or uses sound disposition practices for its excess or surplus electronics. Although HHS has not fully met the goal of 90% use of sound disposition practices, it has demonstrated that it has implemented these practices on 89% of excess or surplus electronics. The remaining excess or surplus electronics that have not been disposed of using sound practices are due to their remote location and inaccessibility of having appropriate disposal facilities. HHS is investigating how to dispose using sound practices in these remote locations.

2. Is your agency tracking and monitoring all of its contract awards for inclusion of requirements for mandatory federally-designated green products in 95% of relevant acquisitions?
HHS is actively tracking and monitoring contract awards for inclusion of requirements for mandatory federally-designated green products in 95% of relevant acquisitions. Each OPDIV conducts manual contract reviews on a quarterly basis to measure compliance with the 95% threshold. By July 2011, HHS will implement a sustainable acquisition policy that mandates the collection of green procurement data into the Departmental Contracts Information System (DCIS), which will facilitate the review and reporting process. HHS has incorporated an environmental component into its Procurement Management Reviews (PMRs) that assess the strengths, weaknesses and best practices of the acquisition function. PMRs will now address compliance with the 95% green purchasing requirement and the effectiveness of each OPDIV

sustainable procurement program. The 95% threshold was also incorporated into the HHS Acquisition Dashboard as a metric that will be measured on a quarterly basis. HHS also conducts buyer outreach and training activities to reinforce sustainable acquisition regulations and convey best practices in green procurement.

3. Has your agency completed energy evaluations on at least 75% of its facilities?
HHS has successfully audited 70% of its covered facilities. Only one Operating Division, the Indian Health Service (IHS), has fallen below the 75% goal. The Department is working closely with IHS, who has negotiated a contract to perform energy and water audits on all covered facilities starting and continuing over the next 6 months.

4. Will your agency meet the deadline of October 1, 2012 (EPACT'05 Sec 103) for metering of energy use?
HHS is on track to meet the electrical metering deadline of 10/1/12. Current status of HHS electrical metering is 78%. HHS Operating Divisions have identified remaining buildings and have contracts in place or planned to meet the requirement.

5. If your agency reports in the FRPP, will it be able to report by December 2011 that at least 7% of its inventory meets the High Performance Sustainable Guiding Principles?
No. Due to limited availability of funds and the relatively small quantity of office space occupied by HHS, we anticipate that this goal will not be met on the basis of total number of buildings. Mission-related or regulatory limitations also make achieving substantial compliance with the GP problematic for certain types of HHS facilities, including historic properties and laboratories. See the April 2011 "HHS Sustainable Building Plan" for more information.

Appendix 1: Agency Response to Climate Change Guiding Questions

Guiding Questions for Understanding How Climate Change Will Impact Agency Mission and Operations

U.S. Department of Health and Human Services (HHS)

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

The mission of the U.S. Department of Health and Human Services (HHS) is to enhance the health and well-being of Americans by providing for effective health and human services and by fostering sound, sustained advances in the sciences underlying medicine, public health, and social services. HHS accomplishes its mission through several hundred programs and initiatives that cover a wide spectrum of activities, serving the American public at every stage of life.

Climate change is likely to adversely affect the ability of HHS to achieve its mission by altering and in many cases increasing disease and injury risks and other threats to human well-being, as well as by posing increasing threats from extreme temperatures, storms, and flooding to the physical infrastructure that HHS supports to provide health care and other services to individuals and communities.

Secretary Sebelius has established five overarching goals for the Department:

Goal 1: Transform Health Care
Goal 2: Advance Scientific Knowledge and Innovation
Goal 3: Advance the Health, Safety, and Well-Being of the American People
Goal 4: Increase Efficiency, Transparency, and Accountability of HHS Programs
Goal 5: Strengthen the Nation's Health and Human Services Infrastructure and Workforce

Because climate change poses multiple threats to the health, safety, and well-being of the American people, Goal 3 and its sub-objectives will be most affected. These impacts are discussed in more detail below and additional goal area impacts will be reviewed over the next few months.

Climate change and societal responses to the diverse challenges of climate change will interact with all of the goals within the HHS strategic plan, including improving the adequacy of the nation's health and human services infrastructure and workforce, advancement of scientific knowledge and innovation, and improving the energy and resource efficiency of HHS programs. This answer will focus on interactions between climate change and the specific objectives of Goal 3, as well as the fourth objective of Goal 1, which is "Ensure access to quality, culturally competent care for vulnerable populations".

Goal 3 has six objectives. The affect of climate change on each of them is summarized below the objective.

Objective A: *Promote the safety, well-being, resilience, and healthy development of children and youth*

Because children are both physiologically and behaviorally more vulnerable to heat waves, extreme weather events, asthma, and many infectious diseases, they are a population at special risk from climate

change, which is likely to exacerbate those health threats. Ensuring the health and well-being of children and youth will require additional resources and attention to climate-exacerbated threats.

Objective B: *Promote economic and social well-being for individuals, families, and communities*

Climate change is anticipated to have adverse impacts on human livelihoods in some areas, resulting from changes in ecosystems and natural resources that people depend on for work and recreation. These include impaired fisheries and coastal ecosystems, loss of water resources, and changes in forests and agriculture. Assuring economic and social well-being for individuals, families and communities will require assuring specific resilience to climate impacts on a local and regional basis.

Objective C: *Improve the accessibility and quality of supportive services for people with disabilities and older adults*

Extreme heat waves and weather events are particularly challenging for people with disabilities and the elderly, who may have underlying diseases that increase health risks as well as impaired mobility which prevents them from escaping weather threats effectively. Supportive services for people with disabilities and older adults will have to be adjusted to address the added challenges of climate change.

Objective D: *Promote prevention and wellness*

While climate change will pose challenges to communities and health care services and may impair efforts to promote prevention and wellness, the significant changes in energy production, transportation, land use, and agriculture that are likely to result from policies and programs to reduce the impacts and severity of climate change afford critical opportunities to assist efforts at prevention and wellness.* For example, programs to improve pedestrian and bicycling convenience in cities can result in significant increases in physical activity, with an array of potential health benefits, ranging from reduced obesity and diabetes to improvement in mental health and reduced risk of certain cancers. Reduced use of fossil fuels is expected to result in improved air quality, leading to reduced risks from cardiovascular disease, respiratory disease, and other health problems.

Objective E: *Reduce the occurrence of infectious diseases*

Warmer soil, water, and air temperatures as well as more frequent extreme precipitation events are anticipated to increase the risks of waterborne and foodborne infectious diseases. In addition, climate change may alter the distribution of vectorborne and zoonotic diseases, resulting in the potential introduction of infectious diseases into vulnerable populations. Efforts to control infectious diseases and reduce their occurrence will require additional scientific understanding of the complex interactions between climate, climate change, and specific infectious diseases and will have to respond to changes in infectious disease transmission and occurrence related to climate change.

Objective F: *Protect Americans' health and safety during emergencies, and foster resilience in response to emergencies*

As part of this objective, HHS developed the first *National Health Security Strategy* (NHSS) (http://www.phe.gov/Preparedness/planning/authority/nhss/Pages/default.aspx), a comprehensive framework for how the entire Nation must work together to protect people's health in the case of an emergency. The strategy lays out current challenges and gaps, and articulates a systems approach for preparedness and response, including identifying responsibilities for all levels of government, communities, families, and individuals.

Climate change is anticipated to increase the incidence of severe flooding and is likely to increase the severity of hurricanes and tropical storms. Sea level rise will increase the vulnerability of low-lying coastal communities to these threats. In addition, higher temperatures and more severe droughts in some

areas are anticipated to lead to more frequent and extensive wildfires. These emergencies will occur in the absence of climate change, but their potential increases in frequency and severity as a result of climate change will necessitate additional resources and preparedness planning.

It will be especially critical for health care facilities and other critical emergency response infrastructure to incorporate future climate change into their planning for continuous operations (COOP). The potential for unprecedented extremes of weather, as has been witnessed in several parts of the world in the past decade, will have to be addressed in order to maintain the ability of our existing health facilities and infrastructure to protect the health and safety of Americans adequately during emergencies.

The fourth objective under Goal 1 is: *Ensure access to quality, culturally competent care for vulnerable populations.*

Climate change is anticipated to have its greatest impact on people whose health status is already at risk and who have the fewest resources to address or adapt to climate change risks. Lower income and minority communities often experience higher rates of asthma, diabetes, and other chronic diseases that place them at higher risk of complications from extreme heat and other extreme weather. In addition, these communities often experience disproportional environmental contamination and may be geographically vulnerable to climate change from being at a low elevation near coastal areas and rivers or being situated within urban "heat islands". Social and economic factors (e.g., economic status, race, ethnicity, age, gender, and education) can significantly affect people's exposure and sensitivity to climate change, as well as their ability to recover. For these reasons, climate change and resulting exacerbation of health risks may disproportionately affect vulnerable populations and impair their ability to access sufficient quality, culturally competent care.

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

Current Collaborations

a) HHS is currently participating in and providing leadership to several interagency efforts to manage the effects of climate change. NIEHS and CDC currently co-chair the Interagency Climate Change and Human Health Group (CCHHG) under the US Global Change Research Program. The CCHHG coordinates research, data collection, outreach and communication, assessment, and adaptation activities within the federal government. HHS is also represented on the President's Climate Adaptation Task Force, the National Climate Assessment Development and Advisory Committee, the US Global Change Research Program, and the CENRS Roundtable on Climate Information and Services.
b) HHS is leading a collaborative partnership with other federal departments and agencies to develop the *National Health Security Strategy* (NHSS), a national framework to prevent, protect against, respond to, and recover from incidents with health consequences. Our national health security requires collective efforts across governments, sectors, and communities. Co-collaborators include DHS and DOD.
c) HHS is a member of the National Ocean Council co-chaired by the White House Council on Environmental Quality and the Office of Science and Technology Policy. The Council is addressing nine priority objectives in the National Ocean Policy, including resiliency and adaptation to climate change and ocean acidification.
d) HHS is a member of the America's Great Outdoors Initiative co-chaired by DOI, EPA, USDA, and CEQ, with the vision of promoting a 21st century conservation and recreation agenda. The initiative

aims to reconnect Americans with the great outdoors and protect our natural resources which are under intense pressure from development and fragmentation, unsustainable use, pollution, and impacts from climate change.

e) HHS is a member of the federal Interagency Working Group on Environmental Justice (EJ IWG), which was created by E.O. 12898 in 1994. The E.O. requires federal agencies, including HHS, to develop agency-wide strategies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The EJ IWG is coordinating an effort to update agency EJ strategies. The impact of climate change on EJ communities is likely to be addressed by the updated agency plans.

Potential Future Collaborations

a) HHS is considering convening the federal agencies with primary responsibility for managing health care facilities, including the VA, DOD, and FEMA, to collaborate on forming climate adaptation strategies. It is critical that all federal agencies share the same body of knowledge of likely and potential risks posed to health care facilities by climate change and have access to expert resources for developing adaptation strategies.
b) Similar collaboration is possible with DOL, DHS and HUD to share information on managing human service systems to help respond to and recover from climate and weather disasters.
c) HHS is considering expansion of existing collaborations on healthy communities, healthy schools, healthy housing, and healthy transportation to take into account climate change impacts on these other areas and sectors. Collaboration would be with EPA, USDA, DOT, HUD, and other agencies.

While HHS understands the importance to collaborate more effectively across government, key collaborations will also be developed at the community level as many of the strategies outlined in the strategic goals build upon State, tribal and local collaborations that will help create social and physical environments that promote good health for all, and work to adapt and mitigate the effects of climate change.

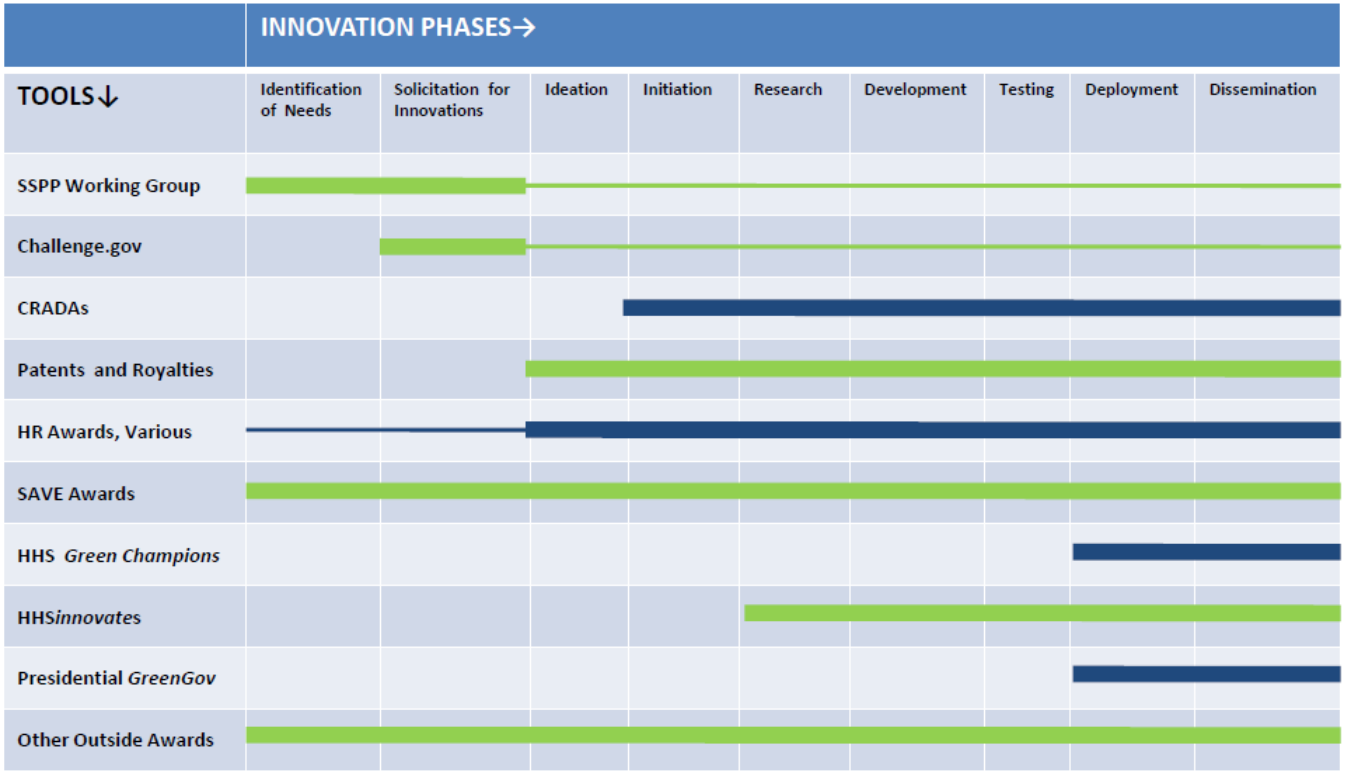
**Anthony J McMichael, Rosalie E Woodruff, Simon Hales, Climate change and human health: present and future risks, The Lancet, Volume 367, Issue 9513, 11 March 2006-17 March 2006, Pages 859-869.*

Appendix 2: Draft Agency Energy & Sustainability Scorecard (July 2011)

FY 2011 STATUS (As of May 2011)		PROGRESS		COMMENTS
 Color	• Submitted comprehensive inventory as 2008 baseline for Scope 1&2 GHG Reduction Target of 10.3% by 2020[1] ___ Inventory submission late or incomplete (Y)	 Color	Actions taken since January 1, 2011: • Energy and Water: Submitted GHG Inventory on 1/31/2011. Continue to refine processes and procedures using best practices and lessons learned to improve FY11 inventory, In April 2011, surveyed HHS Federal employees to more accurately compute scope 3 Federal employee commuter data. OPDIV building water meter inventories were completed to establish a baseline of water metering needs. OPDIVs completed initial leak detection program assessment and milestone list. IHS held energy and water audit training to complete in-house water audits. PSC held the Department's first World Water Day Expo. • Environment: IHS EMS: The IHS Environmental Management System was revised to better serve the IHS mission while also maintaining the critical elements of ISO 14001:2004 and supports the new draft IHS Environmental Compliance, Stewardship, and Sustainability policy and the HHS SSPP. Compost: NIH/NIEHS (North Carolina) diverted ~ 8 tons of cafeteria waste; NIH, Bethesda is reviewing contract modifications for animal bedding and cafeteria materials and an SOW for HHH Bldg. cafeteria composting is pending contract award. Toxics: P2&WE workgroup finalized the 2011 Mercury Policy "Policy Restricting Procurement, Use, Storage and Disposal of Mercury and its Compounds on HHS Facilities." Training: Develop internal sustainability outreach web site content including monthly Department wide sustainability activities, outreach toolkits and the HHS Green Guide, successful Earth Day events at headquarters, OS/PSC, NIH,CDC and FDA. • Transportation: HHS Alternative fuel use for the reporting period 7 January 2011 – 30 June 2011 increased 45%. The aggregate cumulative Alternative fuel gge = 129,880 gge (gasoline gallon equivalent). HHS disseminated the HHS Fleet Manager handbook in FY 2011. HHS modified the Epact 2005, Section 701 business practice; Merged with FEMP to capture fleet asset data. Anticipate using the FEMP Fuel Tracker-National Dashboard Mock-up during Q3 and Q4 FY11. The HHS Motor vehicle Management information System (MVMIS) is modified. Section 246 Alt fuel station construction remains unchanged from prior reporting cycles. • Actions Required by OMB/CEQ: HHS has updated and finalized FY10-12 budget data submission through OMB MAX Collect by 2/11/11. HHS has achieved the 75% audits goal of the covered facilities as required by EISA Sec 432. **Planned actions for next six months:** • Energy and Water: Coordinate an energy and water auditing course for HHS energy personnel to perform in-house audits. NIH will complete the implementation of an automated computer shutdown program that was estimated to reduce energy consumption by three million kWh annually and reduce costs by approximately $400,000 annually. An Energy Expo will be held in October 2011 to highlight energy efficiency and impact on GHG reductions. IHS will install 5 solar PV projects totaling 155 kW of electricity generations. Provide training on leak detection programs and techniques. An Energy Expo will be held in October 2011 to highlight energy efficiency and impact on GHG reductions, and water efficiency strategies. • Environment: Improve waste data tracking for solid waste diversion consistent with SSPP P2WE Goals. Implement HHS mercury reduction policy and continue to develop Toxic Reduction strategies (e.g. building materials). Increase diversion of compostable items from the waste stream. Outreach programs including Energy Awareness and America Recycles Day. • Sustainable Buildings: HHS goals were updated to reflect current baseline inventory and B&F funding stream. • Other Planned Actions: Other planned actions will appear in detail in the 2011 HHS SSPP June-January planned milestones.	• Challenges: The biggest challenge faced is competing mission priorities. Health reform is currently the overwhelming priority for the department, taking up most of the resources available for large scale initiatives. With limited B&F funding for capital improvements, it is difficult to demonstrate marked progress in Sustainable Green Buildings. Mission-driven requirements take priority. HHS goals were established based on meeting the requirements through GSF by 2015; meeting the requirements based on number of buildings would require additional funding to improve the existing inventory. Development of a means to capture ongoing improvements towards achieving sustainability would better demonstrate overall progress than reporting only those buildings meeting 100%. Energy management personnel are not dedicated to energy responsibilities as it is a collateral duty. High cost of solar power yields unfavorable return-on-investments in many areas of the US. Metering of water at IHS facilities is difficult as many water authorities are very small businesses, and many facilities do not have meters. HHS needs fleet focused additional man-months to verify and validate fuel data leading to GHG reduction determinations. • Lessons Learned: Budget and policy integration are key, and sustainability needs to be reflected during the budget formulation process. Sustainability is a good business practice and needs to be integrated into policies and selection processes. • Details: Decreased water intensity by 2.4% from FY2009 with water intensity now at +0.4% from FY2007 baseline (R). Reason for not achieving goal of 4% reduction in water intensity is due to faulty meters and equipment, increase in cooling tower use due to unseasonably warm temperatures, and addition of new process loads and boilers. Sustainable Green Buildings: HHS goals were updated to reflect current baseline inventory and B&F funding stream. Currently, 34.64% of buildings and 45.79% of GSF in HHS FRPP Inventory have been assessed, exceeding HHS planned targets; and 0.71% of buildings and 3.26% of GSF in HHS Baseline Inventory are in compliance with the Guiding Principles. Additional footnotes to FRPP data are provided under separate cover (R). • Assistance: CEQ should market specific best practices from other agencies in order to gain information sharing. Also, additional guidance on the non-traditional Return on Investment elements. Since buy-in typically comes from seeing the bottom line, guidance on the non-financial ROI elements is key to success. In addition, the agency requests a published list of endorsed workgroups throughout the Government that deal with, or are subject matter experts on, different Sustainability areas, so that it could consult or participate on such workgroups.
 Color	• Submitted comprehensive inventory as 2008 baseline for Scope 3 GHG Reduction Target of 3% by 2020[1] ___ Inventory submission late or incomplete (Y)			
 Color	• Reduction in energy intensity in goal-subject facilities compared with 2003: _X_ at least 15% and on track for 30% by 2015 (G) ___ at least 12% (Y)			
 Color	• Use of renewable energy as a percent of facility electricity use: _X_ Total of 5% from renewable electricity sources including 2.5% from new sources (thermal, mechanical, or electric) (G) ___ 5% from any renewable electricity source (Y)			
 Color	• Reduction in potable water intensity compared with 2007 is at least: ___ 6% and on track for 26% in 2020 (G) ___ 4% (Y)	 Color		
 Color	• Reduction in fleet petroleum use compared to 2005 is at least: _X_ ≥10% and/or on track for 20% by 2015 (G) __ ≥8% (Y)			
 Color	• Sustainable green buildings: __at least 5% of buildings sustainable & on track for 15% by 2015 (G) __5% GSF of inventory sustainable (Y)			

Appendix 3: Supplementary Documents

Phased Applications of Incentivisation Tools - Sustainability Innovations



Appendix 4: Acronyms and Abbreviations

ACF: Agency for Children and Families
AFV: Alternative Fuel Vehicle
AIDS: Acquired Immune Deficiency Syndrome
ANSI: American National Standards Institute
APP: Affirmative Procurement Plan
ARRA: American Recovery and Reinvestment Act
ASA: Assistant Secretary for Administration
ASFR: Assistant Secretary for Financial Resources
ASPR: Office of the Assistant Secretary for Preparedness and Response

BAS: Building Automation System
BMAR: Backlog of Maintenance and Repair
BMP: Best Management Practices
BTU: British thermal unit

C&D: Construction and Demolition
CAA: Clean Air Act
CCI: Cloud Computing Infrastructure
CDC: Center for Disease Control and Prevention
CIO: Chief Information Officer
CMS: Centers for Medicare and Medicaid Services
CPU: Central Processing Unit
CTO: Chief Technology Officer

DCCI: Data Center Consolidation
DCIS: Data Center Infrastructure Solutions
DOE: Department of Energy
DOL: Department of Labor
DRM: Design Requirements Manual

EBOM: Existing Buildings Operation and Maintenance
EISA: Energy Independence and Security Act
EMS: Environmental Management Systems
EO: Executive Order
EPA: Environmental Protection Agency
EPCRA: Emergency Planning and Community Right-to-Know Act
EPEAT: Electronic Product Environmental Assessment Tool
ES: Electronic Stewardship

ESP: Electronic Stewardship Plan
ESPC: Energy Savings Performance Contract
EUL: Enhanced Use Lease

FDA: Food and Drug Administration
FEB: Federal Executive Board
FEMP: Federal Energy Management Program
FESW: Federal Electronic Stewardship Workgroup
FPM: Facilities Program Manual
FRPP: Federal Real Property Profile
FTE: Full-Time Equivalent
FY: Fiscal Year

GAM: General Administration Manual
GHG: Greenhouse Gases
GIS: Geographic Information System
GOV: Government
GPRA: Government Performance Results Act
GSA: General Services Administration
GSF: Gross Square Feet
GWP: Global Warming Potential

H1N1: Influenza A virus
HHS: The Department of Health and Human Services
HPC: High Performance Computing
HQ: Headquarters
HRSA: Health Resources and Services Administration
HUD: Department of Housing and Urban Development
HW: Hardware

IEQ: Indoor Environmental Quality
IFMA: International Facilities Management Association
IGA: Office of Intergovernmental Affairs
IHS: Indian Health Service
IPCC: Intergovernmental Panel on Climate Change
IPT: Integrated Project Team
ISWG: Interagency Sustainability Working Group
IT: Information Technology

LAN: Local Area Network
LCCA: Life-Cycle Cost Analysis
LEED: Leadership in Energy and Environmental Design

LID: Low Input Development

MOU: Memorandum of Understanding
MVPDB: Meningitis and Vaccine Preventable Diseases Branch

NEPA: National Environmental Policy Act
NIH: National Institutes of Health
NIOSH: National Institute for Occupational Safety and Health
NPDES: National Pollutant Discharge Elimination System
NREL: National Renewable Energy Laboratory

O&M: Operations and Maintenance
OCIO: Office of the Chief Information Officer
ODS: Ozone Depleting Substances
OFEE: Office of the Federal Environmental Executive
OFMP: Office for Facilities Management and Policy
OGAPA: Office of Grants and Acquisitions Policy and Accountability
OM: Ongoing Maintenance
OMB: Office of Management and Budget
OPDIV: Operating Division
OPM: Office of Personnel Management
OS: Office of the Secretary

PM: Preventative Maintenance
PMR: Procurement Management Reviews
POC: Point of Contact
PPA: Power Purchase Agreement
PSC: Program Support Center
PSS: Public Sector Standards
PUE: Power Usage Effectiveness

RCM: Reliability Centered Maintenance
ROI: Return on Investment

SAMHSA: Substance Abuse and Mental Health Services Administration
SBIP: Sustainable Building Implementation Plan
SF: Square Feet
SRPO: Senior Real Property
SSPP: Strategic Sustainability Performance Plan
STAFFDIV: Staff Division
SW: Software

T&D: Transmission and Distribution

UESC: Utility Energy Service Contract
UPS: Uninterruptible Power Supply
USGBC: US Green Building Council
USGCRP: US Global Change Research Program

VAM: Vehicle Allocation Method
VE: Value Engineering

WRI: World Resources Institute