

# Strategic Sustainability Performance Plan

June 2010

*"The integration of mission, environmental,  
economic and social considerations."*



U.S. Department of Transportation



# **DEPARTMENT OF TRANSPORTATION**

## **STRATEGIC SUSTAINABILITY PERFORMANCE PLAN**

**June 2010**

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## Executive Summary

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In October 2009, President Obama signed Executive Order (EO) 13514 that sets sustainability goals for Federal agencies and focuses on making improvements in environmental, energy and economic performance. The Executive Order requires Federal agencies to set a 2020 greenhouse gas (GHG) emissions reduction target; increase energy efficiency; reduce fleet petroleum consumption; conserve water; reduce waste; support sustainable communities; and leverage Federal purchasing power to promote environmentally-responsible products and technologies.

Implementation of the Executive Order integrates sustainability goals with agency mission and strategic planning to optimize performance and minimize implementation costs. Each agency must develop and carry out an integrated Strategic Sustainability Performance Plan that prioritizes the agency's actions toward the goals of the Executive Order based on lifecycle return on investments and identifies the necessary resources to achieve such goals.

This 2010 Strategic Sustainability Performance Plan (SSPP) represents the first step of a 10 year strategy to meet the challenging requirements in E.O. 13514. DOT will use the SSPP platform to accomplish the goals of EO 13514 along with other pre-existing EO and statutory goals, for example EO 13423, EPOA 2005, and EISA 2007. This first year effort represents a foundation on which the Department will expand and make more robust in subsequent years as sustainability concepts, plans, and programs are explored and adopted. The Secretary of Transportation has designated a Senior Sustainability Officer (SSO) responsible for preparing the Agency's Strategic Sustainability Performance Plan (SSPP) and DOT's conformance with the requirements of the Executive Order. The SSO is responsible for submitting the Agency's plan to the OMB Director and the CEQ Chair and serves as the Agency's environmental and energy representative at Federal interagency meetings.

The Strategic Sustainability Performance Plan was developed based on input gathered from facilitated meetings with subject matter experts and stakeholders across functions and Operating Administrations (OAs) of DOT. Information was also obtained through the review of historical DOT documents and policies that address the different elements in the Plan. The information obtained shows the array of tactical and strategic initiatives that have been (or will be) developed and/implemented across DOT or by individual OAs which form the foundation of this Plan. As a result of the dedication and leadership by DOT employees, the Agency is well positioned to meet the requirements and fulfill the goals of the EO 13514.

The Department of Transportation Strategic Sustainability Performance Plan addresses the following:

- ▶ Sets DOT sustainability policy, including commitments to comply with environmental and energy statutes, regulations, and executive orders.
- ▶ Establishes agency sustainability performance metrics, including greenhouse gas reduction targets, energy intensity, renewable energy, fuel reduction, waste prevention, acquisition and recycling goals.
- ▶ Integrates sustainability with DOT's budget planning process and identifies additional resources needed to achieve set goals.
- ▶ Evaluates DOT's climate change risks and vulnerabilities to manage the effects of climate change on DOT's operations and mission in both the short and long term.
- ▶ Considers environmental measures as well as economic benefits, social benefits, and costs in evaluating projects and activities based on life-cycle return on investment.

The following are examples of key initiatives DOT has implemented (or is planning to implement) to achieve the goals within the Strategic Sustainability Performance Plan:

- ▶ Implement activities to reduce energy and petroleum fuel use and increase renewable energy and alternative fuel use to reach the Scope 1 and 2 GHG reduction target.
- ▶ Implement a Sustainable Buildings Center of Excellence for an enhanced facility retrofit and upgrade program supported with experts in facility management, Energy Savings Performance Contracting (ESPC), and real property data management.
- ▶ Implement a portfolio of technologies to provide more flexibility in employee work locations and travel options (e.g., allow employee productivity to be transient), reducing the agency's scope 3 GHG emissions.
- ▶ Systematically review, update and modify real property portfolio based on the High Performance Sustainable Buildings (HPSB) goals and develop a single-source data system integrating utility consumption, project and physical asset information.
- ▶ Continue to build a center of excellence on Greenhouse Gases, Climate Change, Adaptation and Transportation vehicles and systems through its Transportation and Climate Change Clearinghouse (TCCC).
- ▶ Emphasize pollution prevention as part of the purchasing process as it applies to all acquisitions, contracting mechanisms and energy reduction strategies.
- ▶ Emphasize electronic stewardship to reduce the environmental and energy impacts of electronic product acquisition, operation, maintenance and disposition.
- ▶ Reduce the environmental and energy impacts of data centers.
- ▶ Develop training and awareness materials that help accomplish each goal.
- ▶ Hire and train personnel with the skills, knowledge and capabilities to support DOT in attaining the goals within the Plan.

DOT has identified three organization-wide program areas that will focus on achieving the goals listed within this plan: sustainable facilities and fleet, sustainable acquisition, and sustainable technology. The Sustainable Facilities and Fleet program area will focus on reducing greenhouse emissions (reducing energy use), water consumption, waste, toxic materials, and other environmental impacts. The program will identify key initiatives for achieving GHG reductions, such as reducing petroleum use in fleet vehicles, increasing the use of renewable energy at DOT facilities, implementation of trip reduction strategies to reduce emissions from business travel and employee commuting, incorporation of high performance sustainable buildings guiding principles into DOT facility designs to reduce energy, water and materials consumption. These innovations will be fostered by, a soon to be created, Center of Excellence that provides a forum for enhancing synergy among subject matter experts.

The Sustainable Acquisition Program will enhance and sustain the DOT mission through cost effective acquisitions that ensure compliance, reduce resource consumption and solid and hazardous waste generation. Using the best practices identified in the Green Procurement Plan, DOT will develop an integrated sustainable acquisition process.

The Sustainable Technology Program will reduce environmental impact of surplus electronic equipment and enhance energy saving of servers and DOT data centers through the development and implementation of policies and guidance documents that ensure best management practices are utilized. These policies and guidance documents such as the Electronic Stewardship Plan will provide the foundation for how and when employees use technology as they strive to fulfill DOT's vision and mission. Additionally, DOT will identify new ways to incorporate new technology into work processes to reduce resource intensive activities, e.g., deploy enhanced and expanded video conferencing capability to facilitate travel reduction.

While DOT already has made great strides in addressing many of the goals in the Strategic Sustainability Performance Plan, additional resources will be needed to develop and implement strategies to ensure a leadership position. Currently the agency is identifying the necessary staff to oversee the budget and implementation of projects expected to help the Department meet the goals of the SSPP. With the arrival of new resources and budget, the Agency will be well positioned to lead the implementation and adoption of innovative strategic sustainability initiatives for the next decade.

## Section 1: Department Policy and Strategy

### I. Department Policy Statement

The Department of Transportation (DOT) has designated Kathryn Thomson (Counselor to the Secretary) as the Senior Sustainability Officer (SSO) under Executive Order (EO) 13514, *Federal Leadership in Environmental, Energy and Economic Performance*. A copy of the DOT Agency Policy (Appendix 1) can be found at the end of this document.

The Department is in the early stages of developing comprehensive and integrated Sustainability Programs. However, following is an illustrative list of sustainability projects and initiatives the Department already has implemented:

Sustainability successes:

#### *Environmental Management Systems (EMS)*

- In FY2010, DOT Headquarters in Washington DC implemented its Higher-Tier Environmental Management System.

#### *Facility Energy Management and Sustainable Buildings*

- In FY 2009, DOT finalized its High Performance and Sustainable Buildings Guidance document and developed a Plan of Action and Milestones (POAM) for all Operating Administrations.
- DOT energy use, as measured by intensity, has decreased 15 percent since FY2003 (in non-excluded facilities).
- In FY 2009, the Federal Aviation Administration's (FAA's) Air Traffic Organization (ATO) National Energy Program in collaboration with the FAA Western Service Area (WSA) Service Area Energy Managers (SAEM) obtained a \$500,000 grant from the DOE Hydrogen Infrastructure Group to purchase 28 proton exchange membrane (PEM) fuel cells that will operate on hydrogen.
- In FY 2009, FAA ATO generated approximately 425 MWh of renewable energy from a combination of hydrogen-powered fuel cells, photovoltaic's, and wind power systems.
- In FY 2009, the FAA's WSA purchased 800 MWh of its energy requirements from renewable resources in its Legacy Northwest Mountain, Western Pacific, and Alaskan Regions.
- In FY 2009, the DOT Headquarters building located in Washington, DC purchased 100 percent renewable energy totaling 27,901 MWh from a GSA area-wide contract.
- In 2012, the FRA expects to complete a photovoltaic installation at its Test Center in Pueblo, Colorado, which is still in the planning stages.

#### *Green Purchasing and Electronic Stewardship*

- In FY 2009, DOT finalized its Green Purchasing Plan for all Operating Administrations.
- DOT developed a plan of actions and milestones that will achieve goal of 100 percent power management enabled monitors, computers, and laptops by December 2010.
- DOT has achieved 95 percent of Electronic Product Environmental Assessment Tool (EPEAT) registered computer purchases.
- DOT developed and implemented a Contract Compliance Review Self Inspection Program



*Fleet Management*

- DOT exceeded Alternative Fuel Vehicle acquisition requirements the last three years, the majority of acquisitions have been E85 (ethanol) flex-fuel vehicles. DOT has developed a plan to identify locations where hybrids and electric cars would replace E85 vehicles where alternative fuel infrastructure is non-existent.
- DOT consumed 3,134,606 Gasoline Gallon Equivalents (GGEs) of petroleum fuels in covered vehicles--a decrease of 14 percent from a baseline FY2005.
- DOT consumed 191,057 GGEs of Alternative Fuels, which is 180 percent above the FY 2009 target (far exceeding the target of a 10 percent increase [99,916 GGE total] by end of FY 2009).
- In FY 2009, several DOT employees received internal and external awards as a result of “partnering” with other federal agencies to implement energy and water conservation projects. Employees have received the FAA Administrator’s Environmental Excellence Awards, the Department of Energy’s Federal Energy and Water Management Awards and Energy Champion designations, the White House Closing the Circle Awards, and many other Departmental service awards.
- In FY2010, FAA replaced 23 inefficient gasoline and electric utility vehicles with more efficient low speed electric vehicles at the Mike Monroney Aeronautical Center and the William J. Hughes Technical Centers through participation in the American Reinvestment and Recovery Act.
- The total number of gallons of jet fuel used primarily in aircraft flight inspections of the FAA's National Airspace System (NAS) decreased from 4,406,872 gallons in FY 2003 to 3,673,354 gallons in FY 2009.
- In FY2009, FAA replaced 59 owned inefficient gasoline vehicles with more hybrid, flex fuel, or more efficient gasoline fueled vehicles at various locations through participation in the American Reinvestment and Recovery Act.

## Significant challenges:

- The Department of Transportation has already implemented some of the initiatives described in this Plan and many new initiatives have been identified. Since federal budgets are developed two years in advance these new initiatives are not accounted for in the FY 2010 and FY 2011 budget submission. DOT is currently assessing its planned and expended budget for 2010 and 2011. In the short-term, DOT will need to implement organizational changes to realign existing functions and staff assignments to help compensate until additional resources (both FTE and funding) are obtained through the budget process. Budget estimates are not yet included in this plan as the Department is still determining resource requirements for the new sustainability efforts. The FY 2012 budget will be the first year to incorporate the requirements of EO 13514. DOT is currently identifying comprehensive resource needs for 2012. DOT will include new sustainability programs in the Department’s FY 2012 budget request to OMB. DOT will incorporate these 2012 budget numbers into the SSPP and provide the updated version of the plan to OMB in August 2010.
- The drive toward sustainability will require greater attention and awareness from the Office of the Secretary (OST) and all Operating Administrations (OAs). Currently, the Department primarily relies on the environment and energy management positions to address sustainability issues. To be successful, every function and employee needs to understand, participate and take ownership of sustainability goals and obligations. To ensure the highest level of participation, DOT must engage all employees and managers

through proper training and incentives. Sustainability goals must be incorporated into more job descriptions and employee performance reviews.

- A cornerstone of achieving sustainability is the ability to capture data for baselining and measuring progress relating to each goal in the EO. At this juncture, data availability is limited. Some necessary initiatives in this direction have been identified and initiated. For example, DOT is currently expanding the fields and functionality of its Real Property Information Management System (REMS) and financial information system so that they are capable of capturing energy and water consumption data, 'sustainable building' status (already in place), and renewable energy generation at each facility. The data system will integrate the physical features and processes of the building with financial information creating a centralized repository of information. This system is anticipated to include all of the data required to measure and report facility performance under the EO. It will take two to four years to either acquire or build an operational system capable of performing all of these functions and implement processes to capture the data. In the interim, manual data collection is difficult, time intensive and lacks accuracy.
- DOT's Volpe Center is working with FAA to develop a comprehensive aviation environmental modeling tool for capturing actual flight information to more accurately measure greenhouse gas emissions associated with government business travel.
- FAA's mission requirement to provide a National Airspace System (NAS) for the nation's aviation industry limited the organization's ability to commit to aggressive Scope 1 and 2 reduction targets at this time. A large number of the NAS facilities are unstaffed spaces, where the electrical load serves the safe movement of passenger aircraft. In these instances, the services provided by the electrical supply contain no factors for personal space and are purely for the operation of the equipment. The opportunity to reduce electrical consumption at these sites is extremely limited without affecting the safe and reliable operation of the equipment. As a result, there are limited options for improving energy efficiency for this energy intensive, mission critical sector of DOT. However, FAA's efforts to implement the Next Generation Air Transportation System (NextGen) transformation of the NAS includes more efficient operations and facility optimization, which offers ability to substantially reduce FAA's energy and greenhouse gas emissions footprint. This will provide an opportunity for DOT to have more aggressive Scope 1 and 2 reduction targets in the future.
- DOT has determined that establishing a facility retrofit and upgrade program that integrates five major EO goals: Scope 1 and 2 GHG reductions, energy intensity reduction, water efficiency, high performance sustainable buildings, and on-site renewable energy generation must be a major new initiative. This program will operate like a 'center of excellence'. It will rely on the soon to be developed enhancements in the financial and REMS information systems to help identify the pool of potential candidate facilities for retrofits and upgrades. The objective of this 10-year program will be to develop data information systems (see above) that will facilitate filtering thousands of DOT facilities down to approximately 200 possible candidates for building system upgrades and retrofits. Through this program the 200 or so possible candidate facilities will then be evaluated at a more detailed level to identify approximately 75 best candidates. These 75 "best" candidates will achieve each of the high performance sustainable building guiding principles with the greatest return on investment in one simplified, prioritized program that will be staffed with the expertise to identify projects and carry them out from candidate selection, ESPS/UESC contracting, the actual renovation and building, and verification of results. Developing and ramping up this program over the next two years followed by 8 years for completion of the projects will

be a significant challenge. This program is intended to become a model for the federal community. The retrofit and upgrade program allows for a prioritized, efficient process for achieving sustainable facilities.

- DOT has committed to doubling on-site renewable energy generation. Identifying sites suitable for renewable energy installations and the funding to support it will be a significant challenge. Success will depend heavily on the ‘Sustainable Building’ program identified above to help identify the appropriate sites for renewable energy generation and creative financing through Energy Savings Performance Contract (ESPC)/ Utility Energy Saving Contract (UESC) mechanisms.
- The anticipated growth of several operating administrations within DOT due to expanded mission requirements is expected to place additional pressure on the organization’s ability to achieve the goals identified within this plan. As such, the Department will attempt to incorporate sustainability principles into all aspects of its operations when possible, while meeting its mission requirements.

## II. Sustainability and the Department Mission

The DOT mission is to serve the United States by ensuring a fast, safe, efficient, accessible and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future.

DOT occupies a leadership role in global transportation with 56,757 dedicated professionals stationed in the U.S. and around the world. Since its first official day of operation in 1967, DOT’s programs have evolved to meet the economic demands of the Nation. Today, DOT is composed of the Office of the Secretary, the Surface Transportation Board, the Office of the Inspector General, and the 10 operating administrations listed below (Table 1).

Table 1. Operating Administrations within the Department of Transportation

Operating Administration	Number of Employees*	Number of Buildings** (>5,000 SqFt)	Number of Vehicles***
Federal Aviation Administration (FAA)	48,364	719	4,535
Federal Highway Administration (FHWA)	2,923	6	504
Federal Railroad Administration (FRA)	948	11	327
National Highway Traffic Safety Administration (NHTSA)	650	4	27
Federal Transit Administration (FTA)	716	0†	3
St. Lawrence Seaway Development Corporation (SLSDC)	157	7	
Maritime Administration (MARAD)	846	35	67
Research and Innovative Technology Administration (RITA)	707	6	6
Pipeline and Hazardous Materials Safety Administration (PHMSA)	480	0†	61
Federal Motor Carrier Safety Administration (FMSCA)	1,182	0†	391
Office of the Secretary (Includes OIG and STB)	1,607	2	25
<b>TOTAL</b>	<b>58,578</b>	<b>790</b>	<b>5,846</b>
*Federal employees and contractors			
**DOT owned buildings and leased buildings from GSA			
***DOT leased vehicles from GSA			
†Primarily domiciled in DOT Headquarters building only – may have small regional offices			

DOT defines sustainability as the integration of mission, environmental, economic and social considerations. The sustainable approach balances economic and environmental performance, from beginning to end, and how it integrates with cost, schedule, operations, maintenance, and stakeholder considerations.

DOT is committed to becoming a leader in sustainability. Employees at all levels must be responsible and accountable for integrating environmental stewardship into day-to-day activities to reduce the Department's environmental impact and to protect our natural resources. Incorporating sustainable practices into the agency mission helps to promote energy and natural resource conservation, decreases GHG emissions, reduces pollution and contamination releases, enhances the workplace by minimizing hazardous materials and chemicals and strengthens our national interests by encouraging energy independence. These precepts will become integral aspects of all Departmental activities. Incorporating sustainability into our day-to-day business processes and decision-making enhances mission performance, economic performance, and demonstrates our commitment to protecting our nation's natural resources while ensuring a fast, safe, efficient transportation system.

DOT and its Operating Administrations are committed to comprehensive national energy and environmental and sustainability initiatives that reduce carbon, other harmful emissions and the consumption of fossil fuels. These initiatives also emphasize protecting and enhancing natural resources. DOT will advance transportation investments that reduce energy use and associated greenhouse gas emissions for passenger travel and freight movement, and foster the protection of critical watersheds and ecosystems. Specifically DOT is investing in the transportation infrastructure by creating a High Speed Rail program to realize the President's vision, and implementing the NextGen transformation of the National Airspace System, a wide-ranging evolution from a ground-based system of air traffic control to a satellite based system of air traffic management that will reduce congestion, increase safety and reduce aviation's environmental impact.

In addition, in April 2010 DOT and the U.S. Environmental Protection Agency (EPA) jointly established historic new federal rules that set the first-ever national GHG emissions standards and will significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. The final rule, issued by DOT's National Highway Traffic Safety Administration (NHTSA) and EPA, establishes increasingly stringent fuel economy standards under NHTSA's Corporate Average Fuel Economy program and greenhouse gas emission standards under the Clean Air Act for 2012 through 2016 model-year vehicles. Starting with 2012 model year vehicles, the rules together require automakers to improve fleet-wide fuel economy and reduce fleet-wide greenhouse gas emissions by approximately five percent every year. NHTSA has established fuel economy standards that strengthen each year reaching an estimated 34.1 mpg for the combined industry-wide fleet for model year 2016. The rules could potentially save the average buyer of a 2016 model year car \$3,000 over the life of the vehicle and, nationally, will conserve about 1.8 billion barrels of oil and reduce nearly a billion tons of greenhouse gas emissions over the lives of the vehicles covered. On May 21, 2010, President Obama directed NHTSA and EPA to continue their partnership by developing the same type of standards for heavy duty trucks and the next generation of passenger and light-duty trucks.

DOT is a founding member of the interagency partnership for Sustainable Communities (with U.S. Housing and Urban Development and EPA) which seeks to improve access to affordable housing, create more transportation options, and lower transportation costs while protecting the environment in communities nationwide. Through the Partnership for Sustainable Communities,

DOT will allocate resources to its Livable Communities Program to support initiatives that increase transportation choice and integrate housing and land use into transportation decisions. Livable Communities increase choices for transportation users, provide affordable connections from residences to employment centers and other key amenities, and enhance economic opportunities and environmental sustainability.

Additionally, the DOT established the Center for Climate Change and Environmental Forecasting in 1999 (renamed The Transportation and Climate Change Clearinghouse (TCCC)) to play a leadership role in meeting global climate change issues. The Center has become the focal point within DOT for information and technical expertise on transportation and climate change, working with its component organizations to coordinate related research, policies, and actions. The Center promotes comprehensive multimodal approaches to reduce GHG emissions and prepare for the effects of climate change on the transportation system, while advancing DOT's core goals of safety, mobility, environmental stewardship, and security.

These are only a few examples DOT is taking to confront energy and environmental challenges. But they are clear signs of DOT's commitment to addressing the challenges aggressively.

While DOT is taking numerous steps to be a good steward of our natural resources and environment and ensure a secure and efficient transportation system, the agency faces a myriad of challenges. For instance DOT sees uncertain and unsustainable supplies of energy, water, and other resources, and the unpredictability of natural disasters and terrorism, as having significant potential impact on the nation's transportation system. DOT is in a unique position to set the paradigm for a sustainable, secure, and resilient future by demonstrating how efficiency and sustainability will enhance land, water and air travel.

DOT has developed a draft Strategic Plan for FY2010 – FY2015 that is available for public comment. The Strategic Plan identifies key priorities that will transform the transportation infrastructure into a truly multimodal system that offers the traveling public and businesses safe, convenient, affordable, and environmentally sustainable transportation choices. Centered around five goals, the plan seeks to improve public health and safety, foster livable communities, ensure that transportation assets are maintained in a state of good repair, support the Nation's long-term economic competitiveness, and work to achieve environmental sustainability. Also, the plan sets guidelines for the agency to be transparent and accountable to the American public, performance-based, focused on achieving strategic outcomes, and maximizing the value of public investments.

This 2010 SSPP lays the foundation for incorporating sustainable practices into the key priorities identified in the Agency's Strategic Plan and meeting the requirements of EO 13514. It assigns the appropriate responsibility leaders for the Plan's goals. Progress and status toward achieving the EO goals will be reported twice yearly in July and January to the SSO and Assistant Secretary for Administration via the OMB Sustainability Scorecard and DOT's internal Scorecard for OST and ten Operating Administrations. Additionally, each OA within the Department will develop its own SSPP that integrates with the DOT SSPP. OA SSPPs will be updated annually. Additionally, each OA will be implementing a higher-tier environmental management system over the next two years that integrates the initiatives within this SSPP.

### **III. Greenhouse Gas Reduction Goals**

The Department is committed to helping create a clean energy economy that will increase our Nation's prosperity. Reducing GHG emissions supports the Department mission through

promotion of a safe, fast and efficient transportation system, protecting the interests of taxpayers and safeguarding the health of the environment. The Office of the Assistant Secretary for Administration and Senior Sustainability Officer, in consultation with departmental leadership, will identify and prioritize actions to achieve these goals and bi-annually evaluate performance.

The Office of the Assistant Secretary for Administration and the Senior Sustainability Officer established Scope 1 and 2 GHG emission targets in January 2010. DOT committed to a 12.3 percent reduction in Scope 1 & 2 emissions for the facility and vehicle categories identified in the Department of Energy’s DART tool.

Scope 1 GHGs are direct emissions from sources owned or operated by the reporting agency, which includes stationary combustion emissions from DOT facilities and mobile combustion emissions from DOT vehicles (only those vehicles reported to DOE in the Federal Automotive Statistical Tool). Scope 2 GHGs are indirect emissions from the consumption of purchased electricity, heat or steam at DOT facilities. Scope 3 GHGs are other indirect emissions associated with the disposal of solid waste and wastewater at DOT facilities and employee travel (e.g. business travel and commuting to work).

**Scope 1 and 2 Targets**

In accordance with the requirements in EO 13514, DOT submitted its Scope 1 and 2 GHG emissions reduction target to the Council on Environmental Quality (CEQ) and the Office of Management and Budget (OMB) in January 2010. The Department’s goal is to reduce by 2020 its combined Scope 1 and 2 GHG emissions by 12.3 percent, or 75.5 metric tons (MT) of carbon dioxide equivalent (CO<sub>2</sub>e), from its FY 2008 baseline.

DOT will focus on achieving GHG reductions with respect to the following Scope 1 and 2 emissions sources:

- Facility Energy Use
- Vehicle Fuel Use
- On-site renewable energy generation
- Renewable energy purchases and credits

The following table lists the FY 2020 GHG Scope 1, 2 and 3 emission reduction targets, by category relative to a FY 2008 baseline.

**Table 2. GHG Scope 1, 2 and 3 Reduction Targets for DOT**

Category	CO <sub>2</sub> Savings from 2008 (MTCO <sub>2</sub> e)	
	Tons Reduced	Percent Reduction
Scope 1 and 2 GHG	75,538	12.3%
Scope 3 GHG	23,176	11.0%
<b>Total</b>	<b>98,714</b>	<b>11.9%</b>

### **Scope 3 Targets**

The Department will strive to reduce Scope 3 emissions by 11 percent by 2020 relative to a FY 2008 baseline. DOT will focus on achieving GHG reductions with respect to the following Scope 3 emissions sources:

- Employee air and ground business travel
- Employee commuting
- Waste disposal (solid waste and wastewater)
- Transportation and distribution (T&D) losses related to purchased utilities (e.g., electricity).

The reduction in business travel (both air and ground) and commuting by DOT employees will be the cornerstones of the strategy for reducing the agency's scope 3 GHG emissions. The agency has identified a goal of reducing employee travel emissions by 10 percent by 2020. To achieve this goal, the organization is going to implement a portfolio of technologies to allow employee productivity to be transient. For example, the agency has identified opportunities to reduce employee business travel and commuting emissions through the use of video and web conferencing technology. As a result, DOT plans to adopt and expand state-of-the-art communications technology to reduce the need for employee business travel and commuting emissions. Additionally, the organization plans to increase employees' participation in telework and compressed work week programs and pilot test flexiplace/hoteling practices. DOT recognizes the potential for significant, rapid return on investment by instituting Scope 3 travel and commuting alternatives.

Additionally, DOT will divert 50 percent of its waste from landfills as prescribed by the Executive Order and expects to report a 50 percent reduction in landfill emissions associated with the Department's generated waste. The strategy to reduce emissions from electricity transmission line losses is closely associated with our strategy to reduce electricity usage in DOT facilities as identified in the Department's Scope 2 emissions reduction target, since a reduction in the latter will result in a reduction in the former.

### **Baseline Efforts**

To establish a FY2008 GHG inventory baseline by January 2011, DOT will use the tools and guidance documents developed by DOE, GSA, OMB and OFEE to calculate GHG emissions.

### **Overall Strategy to Meet GHG Targets**

In order to achieve its GHG targets, DOT has developed a high level approach that includes short-term and medium- to long-term activities/initiatives. It builds on existing efforts to improve energy efficiency, reduce the energy intensity of its operations, increase the utilization of alternative fuels, and to purchase and build renewable energy capacity.

#### **Short Term**

- Plan and initiate elements of a new Sustainable Building Center of Excellence Program—establish a portfolio of the 50-100 facility targets that can be upgraded to meet the energy, water, GHG, HPSB, and renewable energy goals.
- Establish methodology for evaluating identifying best locations/value for renewable purchasing and or onsite renewable generation.

- Issue an administrative order to all employees requiring agency wide commuting survey participation. Use survey data to establish baseline of employees' commuting characteristics, including mode of transportation used, distance traveled, and frequency of commute.
- Implement bike to work incentive program.
- Promote and raise awareness of the Federal transit benefit program.
- Increase awareness and value of DOT's telework program through a communications strategy that includes e-mails, electronic newsletters, webinars (net meetings), eLMS training modules, and briefings.
- Purchase low-speed electric vehicles for campus facility settings.
- Deploy approximately 150 new hybrid vehicles in 2011.
- Acquire electric vehicles when available from GSA.
- Implement Alternative Fueling Center plan of action and milestones
- Identify the percentage and numbers of alternative fuel vehicle acquisitions in non-alternative fuel locations to assist DOT in reducing alternative fuel vehicle (AFV) waivers from 10 percent to 5 percent and utilize efficient, conventional fuel vehicles where no alternative fuel infrastructure exists.

#### *Medium Term*

- Implement Sustainable Building Center of Excellence in pursuit of GHG, energy, water efficiency, high performance sustainable building, renewable energy and economic performance goals—retrofit up to 20 buildings.
- Establish a building re-commissioning program (e.g. initial “retro-commissioning” and ongoing “continuous commissioning”) within the Sustainable Building Center of Excellence for buildings that were filtered out of the retrofit project target list.
- Implement awareness program to promote energy conservation and energy efficiency, and distribute information on best practices through awareness and outreach programs across the OAs.
- Launch a DOT-wide share space (hotelling) program pilot; develop metrics, and measure costs and benefits.
- Provide management training and tools for telework and hotelling principles.
- Begin installing on-site renewable energy projects.

#### *Long Term*

- Complete portfolio of building retrofit projects that will achieve the Five Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings which are part of the DOT Sustainable Building Center of Excellence.
- Achieve 20-40 facility re-commissioning projects annually.
- Develop a dashboard system for communicating energy monitoring results and status of Scope 1, 2, and 3 reduction goals.
- Develop a center of excellence of subject matter experts that can address Scope 3 emissions from transportation systems for external audiences.

## **IV. Plan Implementation**

### **a. Environmental Management Systems**



DOT has implemented a Higher Tier Environmental Management System (EMS) to identify, implement and track initiatives and to ensure the organization can monitor progress when meeting the sustainability goals identified in this document. Furthermore, many large DOT facilities have implemented Environmental Management Systems to improve their ability to gather data and report progress on sustainability metrics, including energy consumption, waste production, and water usage. OAs will also implement higher-tier EMSs in the near term.

The EMS serves as a framework to execute department-wide sustainability programs and track performance. The EMS aggregates data from many individual program areas such as energy, fuel consumption, water, waste management, recycling, and environmentally-preferable purchasing. It also functions as a department-wide records system to monitor measure and report compliance. DOT will use the EMS framework to implement, monitor, and continuously improve the goals, programs and projects identified in the SSPP.

DOT manages environmental, energy and sustainability responsibilities at multiple levels by implementing EMSs at levels that are relevant and appropriate. These most commonly include:

- Federal Department or department headquarters-level higher tier
- Operating Administration level(s) higher tier
- Field facilities, program offices or other field-level organizations

**Higher-tier EMS for DOT HQ**

A central goal of the DOT HQ higher-tier EMS implementation is to create a framework that links together all DOT Operating Administrations’ EMSs to address DOT sustainability goals, objectives and targets. The DOT higher-tier EMS sets environmental, energy and sustainability objectives, targets and metrics for the entire organization.

**b. Internal Coordination and Communication**

Table 3 below indicates the internal coordination and processing through the various councils and offices:

**Table 3. Internal Coordination and Processing**

<ul style="list-style-type: none"> <li>• Senior Sustainability Officer (SSO)                             <ul style="list-style-type: none"> <li>• Senior Advisory Board (Membership consists of representatives from each of the Departments within DOT HQ)</li> <li>• Manager, Administrative Policy (Responsible for implementation of DOT Higher-tier EMS)</li> <li>• EMS Higher-tier Workgroup (Membership consists of technical representatives from most of the functional areas within OST)</li> <li>• Departmental Sustainability Working Group</li> <li>• Sustainability Mission Management tool (SM2)—a web-based system that serves as the integrated monitoring and communication platform for the Higher tier EMS across functional areas and Operating Administrations. This tool also serves as the Department’s internal Sustainability Scorecard with metrics for EO 13514, EO 13423, and other Departmental requirements and objectives. (DOT has already built this tool and will share this valuable, almost no-cost tool with the Federal community)</li> </ul> </li> </ul>
<p>EMS Workgroup(s)</p> <ul style="list-style-type: none"> <li>• Workgroups and Committees as identified in the EMS Higher-tier Objective and Targets Procedure</li> </ul>

## Employee Outreach and Training

Employee Outreach and Training is addressed in the EMSs through the elements of *internal communications, awareness training, and competency training*. Internal Communications establishes mechanisms for sending and receiving environmental-, energy- and sustainability-relevant messages to and from employees. This is a continuous activity as employees need to receive updates on new issues, progress towards attaining objectives and targets, and the achievements of individual groups and functions within DOT.

Awareness Training is conducted periodically to remind existing employees and educate new ones on the DOT Sustainability Policy, the existence of the EMS, the sustainability objectives and targets, and what they can do to participate and contribute to the attainment of those objectives and targets.

Competency training addresses the specific competency that certain individuals need to exhibit when they are given EMS roles and responsibilities dealing with specific activities, tasks, programs, and the application of operational controls. DOT will develop and implement the appropriate systems, methods and standards to support the management of a department-wide sustainability program and ensure optimal outreach to DOT employees.

Below are some short-, medium-, and long-term SSPP outreach and training related tasks:

### *Short Term*

- Update DOT environmental, energy, and acquisition policies to include the goals identified in the Strategic Sustainability Performance Plan and EO 13514.
- Develop awareness materials on the goals of the Strategic Sustainability Performance Plan.
- Train Sustainability Mission Management tool (SM2) users
- Establish presence on DOT Intranet

### *Medium Term*

- Create sustainability modules in eLMS training website.
- Identify no cost on-line training providers (e.g. Greenhouse Gas Institute, etc.).
- Determine appropriate means to track and report training progress on the goals of the Strategic Sustainability Performance Plan.

### *Long Term*

- Review and assess training effectiveness and revise or update existing policies, awareness materials and training modules.

Coordination and Dissemination of the Plan to the Field:

- DOT will post copies of the plan on the Agency's intranet website.
- Awareness materials will be developed and distributed to DOT Operating Administration and to field locations.

### **c. Leadership & Accountability:**

The leadership and accountability roles throughout the Department are defined below:

- Kathryn Thomson is the designated SSO for the Department of Transportation.
- DOT has established a Higher Tier EMS Senior Advisory Board to guide the implementation of the Higher-tier EMS at HQ. Collaboration among these key leaders will ensure the employee “buy-in” necessary for the successful implementation of the EMS.
- The Higher Tier EMS Senior Advisory Board establishes working groups made up of representatives from a range of functional areas, including information technology (IT), finance, legal counsel, procurement, human capital, and communications to implement the Higher-tier EMS and the goals of the Strategic Sustainability Performance Plan.
- The Assistant Secretary for Administration oversees policy development and implementation in support of the SSPP.
- The Manager, Administrative Policy will:
  - Draft and update the SSPP to include content from DOT Operating Administrations;
  - Oversee development and report progress on the higher-tier EMS and SSPP to the SSO and the Senior Advisory Board.
  - Monitor and report on DOT EO 13514 compliance.
  - Update internal DOT policy and implement innovative practices to address the goals within the SSPP.
- The Real Property Council will:
  - Identify alternatives to renovation that reduce existing assets’ deferred maintenance costs.
  - Ensure all new construction, major renovation, or repair and alteration complies with the Sustainable Building Guiding Principles.
  - Ensure 15 percent of existing facilities and building leases (above 5,000 GSF) meet the Guiding Principles by FY 2015.
  - Make annual progress towards 100 percent conformance with the Guiding Principles.
  - Achieve zero-net-energy in buildings entering the planning process after 2020.
  - Develop a single-source facility data system
- Senior Procurement Official
  - Issue procurement policies, contract and lease clauses and grant provisions in consonance with green procurement requirements.
  - Conduct self assessments to continually improve green procurement process and better describe environmental and other green requirements in statements of work and contracts.
  - Monitor DOT contracts for requirements of Certificate program such as 52.223-1 and Biobased Product Certification 52.223-7, Recovered Material Certification Content for EPA designated Products.
  - Ensure that FAR 52.204, *Printed or Copied on Double Sided or Recycled Paper* requirement is in all DOT contracts.
  - Utilize statements of work or specifications to eliminate virgin material requirements, promote the reuse of products, require the use of alternative fuels and alternative fueled vehicles, products containing recovered materials (e.g.

EPA-designated products), products that are Energy Star® and FEMP designated or energy-efficient, water conserving WaterSense® labeled products, bio-based products, Environmentally Preferable Products, EPEAT registered products, and non-ozone depleting products.

**d. Agency Policy and Planning Integration:**

DOT and its OAs will issue organizational policy and guidance that establishes and promotes sustainable practices and creates a culture for achieving our sustainability goals. Tasks to be addressed include:

*Short Term*

- Draft DOT policy establishing SSPP goals as requirements for all OAs.
- Require OAs to develop individual SSPPs and integrate goals into higher-tier EMS framework.
- Develop bi-annual internal scorecard report for OAs.
- Policy requiring all new construction meets the Five Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (aiming for Leadership in Energy and Environmental Design (LEED) Silver rating or higher (or a standard equivalent), to the extent possible or where appropriate.
- Finalize and distribute updated Green Procurement and High Performance Sustainable Buildings Implementation Plans to stakeholders.
- Perform gap analysis or assessment to ensure that sustainability goals are adequately incorporated into DOT environmental, acquisition, energy, and real property policy, guidance, procedures and update the documents to reflect the EO requirements.
- Identify opportunities to incorporate sustainability into day-to-day operations and modify operation to address EO requirements.

*Medium Term*

- Begin closing identified gaps.
- Execute initiatives to incorporate sustainability into day-to-day operations.
- Implement major SSPP program initiatives.

*Long Term*

- All DOT National Environmental Policy Act (NEPA) documents will analyze the Climate Change impacts of the proposed action and its alternatives (in accordance with new guidance from CEQ).

**e. Agency Budget Integration:**

The Chief Budget Officer will issue guidance on developing and justifying budget initiatives to support EO 13514 and Strategic Sustainability Plan implementation. The guidance will emphasize life-cycle cost analysis (such as the Sustainable Return on Investment (SROI) method) over initial cost in evaluating submissions.

The Department of Transportation has already implemented some of the initiatives described in this Plan and many new initiatives have been identified. Since federal budgets are developed two years in advance these new initiatives are not accounted for in the FY 2010 and FY 2011 budget submission. DOT is currently assessing our planned and expended budget for 2010 and

2011. In the short-term, DOT will need to implement organizational changes to realign existing functions and staff assignments to help compensate until additional resources (both FTE and funding) are obtained through the budget process. Budget estimates are not yet included in this plan as the Department is still determining resource requirements for the new sustainability efforts. The FY 2012 budget will be the first year to incorporate the requirements of the new EO 13514. DOT is currently identifying comprehensive resource needs for 2012. DOT will include new sustainability programs in the Department's FY 2012 budget request to OMB. DOT will incorporate these 2012 budget numbers into the SSPP and provide the updated version of the plan to OMB in August 2010.

**f. Methods for Evaluation of Progress:**

*Short Term*

- The DOT HQ higher-tier EMS is designed to gather data and report progress on sustainability metrics, including energy and fuel consumption, waste production, and water usage. The system will assist DOT in effectively reducing consumption in compliance with the EO. The higher-tier EMS will serve as the framework to execute a department-wide sustainability program and tracking metrics. As an overarching system, the EMS will aggregate and analyze data from many individual program areas such as energy, water, waste management, recycling, and environmentally-preferable purchasing. It also will function as a department-wide records system to monitor measure and report compliance.
- The EMS will be used to compile data from individual program areas. Department-wide records will be used to monitor, measure, and report compliance with requirements.
  - Dedicate resources to track the status of all facility projects, and ensure that Energy Independence and Security Act (EISA) and other sustainable building requirements are met.
  - Establish a comprehensive policy for centralized energy and water data collection through an information management system across DOT to understand and track energy performance and to align operations.
  - Officially institute the Sustainability Mission Management tool (SM2) and internal bi-annual scorecard report (piloted in 2009-2010) to measure progress and monitor the effectiveness and efficiency of initiatives designed to achieve the goals of the SSPP.
- The Chief Information Officer (CIO) and the Chief Procurement Officer (CPO) will update the department-wide electronic stewardship plan for continual improvement in energy efficiency and economic performance;
- OST will establish DOT standards and policy for greening travel and meetings; and
- The real property council will set mandatory targets for energy savings from retrofits and work with performance contractors and Energy Service Companies (ESCOs) to establish DOT retrofit performance rates to determine final department-wide percentage reduction.

Table 4 below indicates whether the EO goal is relevant to and has been integrated into listed reports or plans listed. A "Yes" response indicates that the EO goal has already been integrated, a "no" indicates that the EO Goal has not yet been integrated, and 'n/a' indicates that the EO Goals are not applicable.

**Table 4: Critical Planning Coordination**

Originating Report / Plan	Scope 1 & 2 GHG Reduction	Scope 3 GHG Reduction	Develop and Maintain Departmental Comprehensive GHG Inventory	High-Performance Sustainable Design / Green Buildings	Regional and Local Planning	Improve Water Use Efficiency and Management	Pollution Prevention and Waste Elimination	Sustainable Acquisition	Electronic Stewardship and Data Centers	Departmental Specific Innovation
GPRA Strategic Plan	n/a	n/a	n/a	?	?	?	?	?	?	?
Departmental Capital Plan	n/a	n/a	n/a	N	?	N	?	?	?	?
A-11 300s	n/a	n/a	n/a	?	?	?	?	?	?	?
Annual Energy Data Report	n/a	n/a	n/a	Y	?	Y	n/a	n/a	n/a	Y
EISA Section 432 Facility Evaluations/Project Reporting	n/a	n/a	n/a	Y	?	N	N	n/a	n/a	n/a
Budget	n/a	n/a	n/a	N	?	N	N	N	N	N
Asset Management Plan / 3 Year Timeline	n/a	n/a	n/a	N	?	N	?	n/a	n/a	N
Circular A-11 Exhibit 53s	n/a	n/a	n/a	N	?	N	?	?	?	?
OMB Scorecards	n/a	n/a	n/a	Y	?	Y	Y	Y	Y	Y
DOE's Annual Federal Fleet Report to Congress and the President	n/a	n/a	n/a	n/a	?	n/a	Y	Y	n/a	Y
Data Center Consolidation Plan	n/a	n/a	n/a	n/a	n/a	n/a	n/a	N	Y	N
EMS	n/a	n/a	N	Y	Y	Y	Y	Y	Y	Y
Sustainable Building Implementation Plan	n/a	n/a	n/a	Y	N	Y	Y	Y	n/a	N
Affirmative Procurement Plan for Green Purchasing	n/a	n/a	n/a	n/a	n/a	n/a	Y	Y	Y	Y
NEPA Documents (EAs and EISs)	n/a	n/a	n/a	Y	N	n/a	?	n/a	n/a	n/a

DOT is currently working to integrate the goals of the EO into its other reporting documents and DOT’s EMS. However, this is expected to take time due to the significant level of effort necessary to educate and train stakeholders and identify opportunities to integrate SSPP goals with other organizational reporting goals. Nevertheless, DOT anticipates the integration of SSPP goals and principles into other DOT reports to occur on a regular basis.

**V. Evaluation Return on Investment**

**a. Economic Lifecycle Cost / Return on Investment:**

- When evaluating sustainability initiatives, DOT will conduct a lifecycle cost analysis and seek to focus funding on projects with a high return on investment (ROI). Using the Sustainable Return on Investment (SROI) method approach recognizes the full service life of buildings and building systems; acquisition policies; energy star electronic equipment; and fuel efficient vehicles by assessing the long-term benefits or operational improvements. Full lifecycle cost analysis will help to ensure that federal dollars are spent wisely and energy savings are maximized; and
- As a general guideline, for energy and water efficiency and conservation projects, DOT will pursue implementation of projects with a 10 year or shorter simple payback.

However, as stated above, the SROI relative to the full life cycle of the project or system will be taken into account. Thus, in some cases, the payback period for a project may be longer than 10 years, but if it is shorter than the expected asset lifespan; such projects will also be considered.

**b. Social Costs & Benefits:**

- Most DOT facilities are not open to the public so there is little potential for recreational value, except for the employees at the facility. However, there are many other opportunities for consideration of social costs and benefits. This can be demonstrated through seeking to address geographically localized challenges or toward social benefits. For example, water conservation projects within drought-prone regions could be more highly prioritized than in water abundant regions.
- Currently, DOT employs a review process pursuant to the NEPA for all proposed construction projects and major actions. The NEPA process is currently used to evaluate the social benefits and costs of new construction projects. Environmental justice issues are an integral part of these analyses. Other social costs and benefits are also considered, such as cultural, historical and socioeconomic impacts (e.g., local employment). While these analyses are typically more qualitative than quantitative, DOT will strive to enhance the NEPA review process and ensure these aspects of the NEPA review are robust.
- Livable communities—DOT, HUD, EPA, and GSA, in coordination with the Departments of Homeland Security, and Defense, have developed a recommendations document addressing sustainable location strategies for siting Federal Facilities. This fulfills the directive of Section 10 in Executive Order 13514 to provide the Council on Environmental Quality Chair with recommendations regarding sustainable location strategies for federal buildings in agency Sustainability Plans.

**c. Environmental Costs & Benefits:**

- DOT will continue to integrate environmental, energy and sustainability considerations into the Department's planning and budgeting processes. As stated above, DOT employs a NEPA review process for all proposed construction projects and major actions to consider potential environmental impacts. DOT will continue to strive to ensure robust NEPA reviews and to minimize environmental impacts and costs.
- DOT has not tracked environmental cost and benefits for non-environmental projects. Environmental costs could be identified in terms of dollars spent on the environmental portion of projects, disposal costs, fines and penalties for non-compliance, and environmental response to incidents. Currently, DOT can produce only qualitative information about the benefits of its environmental programs; however, DOT is working to develop methods to monetize these benefits through the use of the Sustainable Return on Investment method. The results of this effort will become available over the next few years.
- DOT will strive to identify the cost of sustainability initiatives and measure quantitative benefits in terms of emission reductions, gallons of water saved, reduction in vehicle miles traveled, etc. Not all of the benefits can be translated into dollar figures.

**d. Mission-Specific Costs & Benefits:**

- Mission-specific costs are usually measured against providing the required level of mission accomplishment. Benefits could be addressed based on lives saved or buildings protected, but this would be challenging to quantify. Benefits are typically qualitatively represented, but not fully quantified.

**e. Operations & Maintenance and Deferred Investments:**

- DOT is considering many alternative processes that can help identify and prioritize operations and maintenance issues and also include sustainability as a factor. In addition, ROI is a significant factor in the prioritization.

**f. Climate Change Risk and Vulnerability:**

Climate change has the potential to impact DOT's facilities, operations, and mission, e.g., by increasing the intensity and number of extreme weather events which threaten the nation's transportation infrastructure. DOT must implement its own cost-effective strategies to address these concerns by planning adaptation strategies. This includes but is not limited to: incorporating adaptation measures to potential changes in the natural environment into mission plans. Such strategies can save taxpayer dollars and safeguard public health and the environment.

Costs and benefits resulting from climate change impacts are currently not addressed or quantified in DOT evaluation processes. While it is challenging to predict, quantify, and weigh the costs and benefits resulting from climate change impacts, DOT will develop a proactive approach in evaluating climate change risks in the planning, design, construction, renovation of its facilities and infrastructure. Additionally, DOT will consider the following strategies for addressing and prioritizing considerations involving climate change risks and vulnerabilities:

- As part of other facility and infrastructure security, and/or condition assessments, include evaluations related to climate change vulnerabilities;
- Develop a climate change adaptation plan for the Agency; and
- Address sea level rise and other weather/climate changes in new and existing facility and infrastructure design and renovations. Possible strategies include prioritize cooling performance design and operation when modeling energy usage for new construction using expected climate temperature shifts, elevating existing facilities or building with larger setbacks.

**Transparency**

The SSO, working through the Senior Advisory Board, will establish the transparency methods that DOT will pursue which may include those goals below and others as yet unidentified.

*Short Term*

- Assistant Secretary for Administration will identify and recommend to the SSO which information in the SSPP should be made publicly available to ensure the Agency is as open and as transparent as possible.
- SSO will review Assistant Secretary for Administration's recommendations and forward the information to OMB.
- Assistant Secretary for Administration will determine how to address pending OMB guidance for transparency.

*Medium Term*

- Assistant Secretary for Administration will identify how information will be shared both internally and externally.
- Assistant Secretary for Administration will identify a process for sharing internally and externally along with assigning responsibilities.



- Pilot internal information is shared.
- Pilot external information is shared.

*Long Term*

- Internal and external information routinely shared.

Internal Communications:

The SSPP will be posted on the DOT intranet along with periodic progress reports. Informational and awareness materials will be developed for the DOT intranet site and broadcast messages and other relevant DOT communications mechanisms. Progress reports will become a standing item for the EMS Senior Advisory Board.

External Communications:

A DOT Sustainability page will be developed to publicize the Agency's efforts. Several DOT operating administrations will have the opportunity to capitalize on daily interaction with the public and will be encouraged to develop strategies to benefit the DOT's operations by publicizing, when possible and cost-effective, sustainability efforts.

In addition, any construction projects involving a NEPA review at the level of an Environmental Assessment (EA) or Environmental Impact Statement (EIS) will require DOT to provide opportunities for public review and comment. DOT will continue to perform public notifications and outreach regarding such projects, not only to comply with NEPA requirements, but to also strive for transparency.

## Section 2: Performance Review & Annual Update

### I. Summary of Accomplishments:

The Department of Transportation (DOT) has shown success in recent years in achieving the overall targets and goals established by Executive Order (EO) 13514. The following are examples of successful initiatives that, while undertaken before the EO was issued, show DOT's dedication to sustainability and the underlying principles.

- DOT has exceeded Alternate Fuels Vehicles acquisition requirements the last three years, the majority of acquisitions have been E85 (ethanol) flex-fuel vehicles. DOT has developed a plan to identify locations where hybrids and electric cars would replace E85 vehicles where alternative fuel infrastructure is non-existent.
- DOT consumed 3,134,606 GGE of petroleum fuels in covered vehicles--a decrease of 14 percent from the FY2005 baseline year.
- DOT consumed 191,057 GGE of Alternative Fuels, which is 180 percent above the FY 2009 target (far exceeding the target of a 10 percent increase [99,916 GGE total] by end of FY 2009).
- In FY 2009, several Transportation employees received internal and external awards as a result of "partnering" with other federal agencies to implement energy and water conservation projects. Employees have received the FAA Administrator's Environmental Excellence Awards, the Department of Energy's Federal Energy and Water Management Awards and Energy Champion designations, the White House Closing the Circle Awards, and many other Departmental service awards.
- DOT energy use, as measured by intensity, has decreased 15 percent since FY2003.
  - The FAA achieved an overall energy reduction of 13.9 percent.
  - The Saint Lawrence Seaway Development Corporation (SLSDC) achieved an overall energy reduction of 19.2 percent.
  - The RITA - Volpe Center achieved an overall energy reduction of 6.7 percent, and
  - The DOT Headquarters building achieved an overall reduction of 35.7 percent.
- In FY 2009, the FAA AMC replaced 18 gasoline powered vehicles in its maintenance fleet with electric powered vehicles.
- The total number of gallons of jet fuel used primarily in aircraft flight inspections of the FAA's National Airspace System (NAS) decreased from 4,406,872 gallons in FY 2003 to 3,673,354 gallons in FY 2009.
- In FY 2009, the FAA's ATO National Energy Program in collaboration with the FAA Western Service Area (WSA) Service Area Energy Managers (SAEM) obtained a \$500,000 grant from the DOE Hydrogen Infrastructure Group to purchase 28 proton exchange membrane (PEM) fuel cells that will operate on hydrogen.
- In FY 2009, FAA ATO generated approximately 425 MWh of renewable energy from a combination of hydrogen-powered fuel cells, photovoltaic's, and wind power systems.
- The FAA's Western Service Area (WSA) purchased 800 MWh of its energy requirements from renewable resources in its Legacy Northwest Mountain, Western Pacific, and Alaskan Regions.
- The DOT Headquarters Building located in Washington, DC purchased 100 percent renewable energy totaling 27,901 MWh from a GSA area-wide contract.
- The RITA - Volpe Center reported 3 percent or 262 MWh of electric capacity from renewable sources via area-wide electrical generation contract with GSA, Region 1.

- In FY 2009 DOT used approximately 17.4 Gallons/GSF resulting in a reduction of 3.3 percent from a FY2007 baseline.
- In FY2009, RITA – Volpe Center consumed approximately 5.7 million gallons of water, which equates to a 47.1 percent reduction or 3.4 million gallons less from FY2008.
- In FY 2009, DOT finalized its High Performance and Sustainable Buildings Guidance document and Green Purchasing Plan for all Operating Administrations.
- The FAA Air Traffic Organization (ATO) funded approximately \$455,000 worth of energy retrofit and capital improvement projects in the Western, Central, and Eastern Service Areas.
- The FAA ATO National Energy Program plans to complete implementation of work orders that have been awarded for a 25 kW photovoltaic site in Hamakua, Hawaii and a 50 kW photovoltaic site in Pahoia, Hawaii.
- The DOT purchased 33,133 monitors, computers, and laptops that were EPEAT Silver and 55,351 that were EPEAT Gold.
- The DOT developed a plan of actions and milestones that will achieve goal of 100 percent power management enabled monitors, computers, and laptops by December 2010.
- DOT has achieved 95 percent of EPEAT purchases.
- The DOT developed and implemented a Contract Compliance Review Self Inspection Program that provides a measure on how well the goals within the Green Purchasing Plan are being met and the depth of implementation of green procurement throughout the Agency.
- The DOT conducted Green Procurement Training for acquisition community.
- The DOT implemented a higher-tier Environmental Management System.

The development and implementation of future initiatives will benefit from the challenges, and lessons learned resulting from previous initiatives. The following are examples of challenges and lessons learned.

### **Challenges:**

- The Department of Transportation has already implemented some of the initiatives described in this Plan and many new initiatives have been identified. Since federal budgets are developed two years in advance these new initiatives are not accounted for in the FY 2010 and FY 2011 budget submission. DOT is currently assessing our planned and expended budget for 2010 and 2011. In the short-term, DOT will need to implement organizational changes to realign existing functions and staff assignments to help compensate until additional resources (both FTE and funding) are obtained through the budget process. Budget estimates are not yet included in this plan as the Department is still determining resource requirements for the new sustainability efforts. The FY 2012 budget will be the first year to incorporate the requirements of the new EO 13514. DOT is currently identifying comprehensive resource needs for 2012. DOT will include new sustainability programs in the Department's FY 2012 budget request to OMB. DOT will incorporate these 2012 budget numbers into the SSPP and provide the updated version of the plan to OMB in August 2010.
- The shift to sustainability will require greater attention from all Operating Administrations (OAs) and departments within DOT. Currently the Department primarily relies on environmental offices and staff to address sustainability. To be successful, every employee needs to understand, participate and contribute to the attainment of sustainability goals,

which will require years to be fully imbedded. To ensure the highest level of participation, DOT must engage all employees, and managers, through proper training and incentives. Sustainability goals also should be incorporated into job descriptions and employee performance reviews.

- Limited data availability and quality is a major impediment to base lining and measuring sustainability performance and identify best target initiatives. DOT is beginning to take steps to improve data systems. DOT is currently updating and consolidating its data Information Management System that is capable of capturing utility consumption its facilities. The data system integrates the physical features and processes of the building with financial information creating a centralized repository of information. This system is anticipated to include all of the data required to measure and report performance under the EO. It will take two to four years to either acquire or build an operational system capable of performing this function and implement processes to capture the data. In the interim, manual data collection will be used to obtain the information required for reporting. This will likely be a significant drain on existing resource levels. In addition, a web-based sustainability mission management system has been created to track the performance of the Department and its operating administrations in meeting the EO goals.

### **Lessons Learned**

- The Federal Aviation Administration's mission requirement to provide a National Airspace System (NAS) for the nation's aviation industry limited the Department's ability to commit to aggressive Scope 1 and 2 reduction targets at this time. A large number of the NAS facilities are unstaffed spaces, where the electrical load serves the safe movement of passenger aircraft. In these instances, the services provided by the electrical supply contain no factors for personal space and are purely for the operation of the equipment. The opportunity to reduce electrical consumption at these sites is extremely limited without affecting the safe and reliable operation of the equipment. As a result, there are limited options for improving energy efficiency for this energy intensive, mission critical sector of DOT. However, FAA's efforts to implement the Next Generation Air Transportation System (NextGen) transformation of the NAS includes more efficient operations and facility optimization, which offers the ability to substantially reduce FAA's energy and greenhouse gas emissions footprint. This will provide an opportunity for DOT to have more aggressive Scope 1 and 2 reduction targets in the future.
- The implementation of distributed energy projects at DOT facilities will increase operational security by making them less dependent on grid supplied power and their ability to participate in Demand Response programs. This is especially important for our operations and data centers which must maintain 24-7 operations. Use of domestically produced biofuels and products can also decrease our dependency upon imported oil and could help to stabilize costs.
- In some cases, security interests related to locating facilities may be in conflict with the goal of increased regional and local planning coordination. DOT will strive to accommodate sustainable building location while ensuring the security of its facilities, employees, and the public.

## II. Goal Performance Review

### 1. GOAL 1: Scope 1 & 2 Greenhouse Gas Reduction

Executive Order (EO) 13514 requires agencies to measure, report, and reduce GHG emissions from direct and indirect activities. EO 13514 builds upon several existing Federal statutory and EO requirements related to energy and environmental management. Existing mandates include the National Energy Conservation Policy Act (NECPA) of 1978, the Energy Policy Act of 2005 (EPAAct 2005), the Energy Independence and Security Act (EISA) of 2007, and EO 13423 of 2007. These mandates have established various goals for energy management, renewable energy use, and other activities that reduce GHG emissions.

EO 13514 defines Scope 1 greenhouse gas emissions as direct emissions from sources that are owned or controlled by a federal agency. Scope 1 emissions result primarily from the following types of activities: 1) generation of electricity, heat, cooling, or steam from combustion of fuels in stationary sources (e.g., boilers, furnaces, turbines, and emergency generators); 2) mobile sources from the combustion of fuels in agency-controlled mobile combustion sources (e.g., automobiles, ships, and aircraft), including federal fleet vehicles, such as GSA-leased, commercially leased, and agency-owned vehicles; 3) fugitive emissions from intentional or unintentional releases of GHGs from within the agency's organizational boundary; and 4) process emissions from the manufacturing or processing of chemicals and materials, and from laboratory activities (e.g., equipment leaks from joints, landfills and wastewater treatment plants; HFC (Hydro-fluorocarbon) emissions from the use of refrigeration and air conditioning equipment; SF6 (Sulfur-hexafluoride) emissions from leaking electrical equipment). Scope 2 emissions are defined as indirect emissions resulting from the consumption of purchased electricity, heat or steam purchased by a federal agency.

The Department of Transportation (DOT) is committed to reduce emissions beyond its own organizational boundaries and to influence employee and supplier behavior to reduce greenhouse gas emissions and protect the climate. As required by EO 13514, DOT submitted its Scope 1 and 2 greenhouse gas percentage reduction target for Fiscal Year (FY) 2020 relative to a FY 2008 baseline. The Department used the Development of Agency Reduction Targets (DART) tool created by the Office of the Federal Environmental Executive (OFEE) to calculate its reduction target. DOT is committed to achieving a 12.3 percent reduction in Scope 1 and 2 GHG emissions by FY 2020.

DOT will implement aggressive energy and fuel savings activities to reach the GHG reduction target identified above. GHG reduction will be achieved through a High Performance Sustainable Buildings (HPSB) program (Goal 4) along with additional initiatives specifically targeting alternative fuels and high efficiency vehicles (See DOT Executable Plan for EISA 2007, Section 142 (Appendix 5)). The GHG reduction goal requires establishing new initiatives, tools, and policies, along with developing awareness and training. The following is an overview of the goals and short, medium, and long-term initiatives that will achieve the EO goals. The GHG reduction goal will be integrated with other EO goals (e.g., Sustainable Building requirements) to achieve greater over all implementation efficiency. These strategies will be further refined in future annual updates of this Plan.

#### **a. Goal description –**

To fulfill the requirements of EOs 13423 and 13514, DOT will plan and take action working across the OAs to:

- Develop and implement innovative policies and practices to reduce overall agency Scope 1 and 2 GHG emissions by 12.3 percent by 2020 relative to an FY 2008 baseline.
- Reduce facility energy intensity by 30 percent by 2015 (Baseline: FY 2003).
- Purchase Renewable Energy Certificates (RECs)--the equivalent of 5 percent of the Department's 2015 electricity consumption.
- Purchase 110,000 MWH of renewable electricity (currently purchase 32,000 MWH of renewable electricity).
- Install onsite renewable energy power project(s) that would double the Department's current on-site renewable power production to 820 MW.
- Reduce petroleum use in fleet vehicles by 2 percent annually through FY2020 (Baseline FY2005).
- Increase use of alternative fuels in Fleet AFVs.
- Optimize use of vehicles and right-size fleet.
- Increase use of low emission and high fuel economy vehicles.

***b. Department lead for goal –***

The Office of Administrative Policy in the Office of the Secretary, as the designated Department lead, will work across the OAs to implement the activities for GHG management and accounting.

***c. Implementation methods –***

DOT plans to achieve the established Scope 1 and 2 reduction targets through a major facility upgrade/retrofit program, energy efficiency, the use and installation of renewable energy, reduced fossil fuel use by non-tactical vehicle fleets, increased alternative fuel usage beyond the minimum requirement, acquisition of AFVs, and acquisition of hybrid and fuel efficient vehicles.

*Buildings:*

- Reduce facility energy intensity by 30 percent by 2015 (Baseline: FY 2003).
- Reduce 10 percent electricity in non-excluded\* facilities from 2015 to 2020.
- Reduce 10 percent natural gas in non-excluded\* facilities from 2015 to 2020.
- Purchase 110,000 MWH of renewable electricity (currently purchase 32,000 MWH of renewable electricity).
- Install onsite renewable energy power project(s) that would double the Department's current on-site renewable power production to 820 MW.
- Purchase Renewable Energy Certificates (RECs) the equivalent of 5 percent of the Department's 2015 electricity consumption from 2015 to 2020.
- Purchase 110,000 MWh of renewable electricity from 2015 to 2020.
- Install onsite renewable energy power project(s) that would double the Department's current on-site renewable power production to 820 MWh from 2015 to 2020.

\*Note: Non-excluded facilities are the facilities covered under EO 13423 and which are required to meet the 2015 target of 30 percent reduction in energy consumption.

*Fleet:*

- Reduce petroleum use in fleet vehicles by 2 percent annually through FY2020 (Baseline FY2005).
- Reduce gasoline usage by 15 percent from 2015 to 2020.

- Reduce diesel fuel usage by 10 percent from 2015 to 2020.
- Increase use of alternative fuels in Fleet AFV's by 10 percent annually through FY2020 (baseline FY2005).
- Use of 15,000 gasoline gallon equivalents (GGE) from biodiesel from 2015 to 2020.
- Use 5,000 GGE of electric power for electric vehicles from 2015 to 2020.
- Increase use of alternative fuels in fleet AFVs.
- Optimize use of vehicles and right-size fleet.
- Increase use of low emission and high fuel economy vehicles.

DOT has developed Scope 1 and 2 emissions reduction strategies that include short-, medium-, and long-term initiatives to accomplish these goals.

## 1.1. Short-Term Initiatives

### 1.1.1. Policy and Guidance

- Develop policy and guidance to reduce the energy intensity of buildings and maximize the use of renewable (e.g., solar, wind) and alternative energy (e.g., combined heat & power), especially through on-site generation.
- Develop policy for fuel efficient and alternative fuel vehicles.
- Identify needs and develop building sustainability policies and guidance.
- Issue administrative order requiring use of low emission and high fuel economy vehicles, when practicable.
- Update or issue policy guidance on renewable (e.g., solar, wind) and alternative energy (e.g., combine heat & power) to encourage the use of renewable energy through funding, training, promoting, and partnering with other federal agencies.
- Utilize statements of work or specifications to eliminate virgin material requirements, promote the reuse of products, require the use of alternative fuels and alternative fueled vehicles, products containing recovered materials (e.g. EPA-designated products), products that are Energy Star® and FEMP designated or energy-efficient, water conserving WaterSense® labeled products, bio-based products, Environmentally Preferable Products, EPEAT registered products, and non-ozone depleting products.
- Update contracts and leases to reflect energy saving practices and renewal requirements.

### 1.1.2. Planning and Design

- Establish methodology for evaluating inventory and identifying best locations for renewable purchasing and/or onsite renewable generation.
- Conduct baseline energy audits at DOT sites to determine existing and future energy sources and energy consumption.
- Investigate (or expand) performance contracts (e.g., energy savings performance contracts (ESPCs), utility energy services contracts (UESCs), and Enhanced Use Leases (EULs)) as a means to integrate energy-savings and renewable energy generation technologies in a cost-effective and efficient manner.
- Streamline the National Environmental Policy Act (NEPA) process (e.g., prepare Programmatic Environmental Impact Statements) in order to expedite renewable energy projects.
- Analyze life-cycle cost of green power alternatives and identify barriers to implementation that prevent deployment (e.g., return on investment, logistical

support, maintenance, cost of spare parts, training of technicians) of green power alternatives (e.g., solar power, wind power, fuel cell power).

#### *1.1.3. Training and Awareness*

- Develop training and awareness to ensure that appropriate agency programs and technical personnel are knowledgeable about the energy and sustainable buildings requirements of EISA, EO 13514 and the Sustainable Building Implementation Plan (SBIP).
- Communicate goals to management on energy consumption, demonstrate facility operations savings potential, and identify opportunities for improvement.
- Educate employees on the importance of using alternative fuels to help meet the requirements and increase DOT's alternative fuel usage overall.
- Establish web sites for interactive employee discussion, ideas and provide a platform for forums on the Department policies around energy and sustainable buildings.
- Create a DOT-wide greening initiative, that includes energy conservation and waste reduction, to foster culture change that is directed to all employees with an emphasis on key stakeholders and decision-makers.
- Develop web-based training modules in eLMS on energy management awareness, energy efficiency and water management training to maintain systems and modify behavior.
- Facilitate and coordinate educational and promotional programs (e.g., Certified Energy Manager (CEM®) certification for energy managers, Leadership in Energy and Environmental Design (LEED) professional accreditation or a standard equivalent) for employees and contractors, to the extent possible or where appropriate.
- Increase awareness and disseminate participation levels in DOT telework program through a communications strategy that includes e-mails, electronic newsletters, webinars (net meetings), eLMS training modules, and briefings.

#### *1.1.4. Buildings*

- Establish a Sustainable Buildings Center of Excellence that targets building upgrades based on all appropriate EO goals.
- Establish a whole building performance target that takes into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the Energy Star® targets for new construction and major renovation and leases.
- Require a LEED Silver rating or higher (or a standard equivalent) for DOT government leases, to the extent possible or where appropriate.
- Reduce facility energy consumption through the use of energy conservation measures (ECMs), commissioning, energy audits, ESPCs and UESCs.
- Produce on-site renewable energy and reduce energy purchases from off-site sources.
- Continue to fund projects (e.g., energy retrofit, capital improvement) that involve building modernization upgrades in the areas of HVAC; automatic controls, lighting, and building envelope energy efficient technology installations.
- Examine demand management programs which support the grid integrity and can generate revenue for facilities.
- Establish a continuous commissioning program for DOT facilities to resolve operating problems, improve comfort, optimize energy use and identify candidate buildings for retrofit projects.



- Expand the ESPC program
- Accelerate the metering program to reduce energy costs and improve operations DOT-wide.
- Implement an advanced metering infrastructure that will provide a system for collecting, tracking and reporting monthly data at the facility level, consistent with EPA Act and EISA requirements.

#### *1.1.5. Fleet*

- Conduct a mission analysis and identify measures to 'right-size' the fleet; having the appropriate number of vehicles relative to need and employing the most fuel-efficient vehicle for the required task.
- Direct OAs to right-size their fleets using the criteria established by the DOT Fleet Manager.
- Reassess vehicle needs for mission support to ensure the optimal type and size of vehicles are acquired according to the mission it supports.
- Continue efforts to reduce petroleum consumption through increased alternative fuel usage beyond the minimum requirement, acquisition of AFVs, and acquisition of hybrid and fuel efficient vehicles.
- Continue identifying locations where hybrids and electric cars would replace E85 vehicles where alternative fuel infrastructure is non-existent.
- Maximize the use of public transportation, enhance the Department's shuttle program, and requisition alternative fuel vehicles where alternative fuel stations are located.
- Schedule business trips to avoid roadway congestion associated with peak travel times.
- Target non-waivered AFVs where alternative fuel is not being used by utilizing the NREL Alternative Fuel Station Locator website.
- Develop a DOT-wide onsite process to generate onsite biodiesel (e.g., use cafeteria grease) for vehicles and ships.
- Partner with private sector and DOE on alternative fuel station locations and new vehicle technologies.

#### *1.1.6. Tracking and Reporting*

- Create a system to evaluate inventory and identify best locations/value for renewable purchasing and/or onsite renewable generation.
- Implement a real time, interactive data system to monitor DOT's sub-organizations' fuel usage of alternative fuel vehicles; include an early intervention process that will notify DOT Fleet Manager of low alternative fuel usage in DOT's organizations. This system will facilitate targeting the best opportunities for improvement and early intervention to ensure the fleet goals continue to stay on track.
- Identify the percentage and numbers of alternate fuel acquisitions in non-alternative fuel locations to assist DOT in reducing alternative fuel vehicle waivers from 10 percent to 5 percent and new acquisitions of alternative fuel vehicles from 10 percent to 80 percent.
- Develop a community of interest to capture best practices (e.g., green procurement) and share implementation strategies.

## **1.2. Medium-Term Initiatives**

### *1.2.1. Policy and Guidance*

- Develop or update building sustainability policies and guidance contracts, training and other areas of the sustainable building program.
- Include criteria encouraging lease provisions that support the Guiding Principles according to the HPSB Guidance.
- Incorporate criteria for sustainable design and development, energy efficiency, and verification of building performance into build-to-suit lease solicitations.
- Develop processes and guidance to eliminate the use of ozone depleting compounds in existing buildings. Instead, where available, utilize alternative, environmentally preferable products, consistent with either the Montreal Protocol or Title VI of the Clean Air Act Amendments of 1990 or equivalent overall air quality benefits that take into account lifecycle impacts.
- Pilot test a hotelling approach to space management combined with telework and compressed work week strategies to determine the potential for better utilizing existing office space, or reducing necessary office space.
- Launch a DOT-wide share space (hotelling) program pilot; develop metrics, and measure costs, benefits, obstacles and evaluate the potential for implementation and expansion in parts of the Department where appropriate.

#### *1.2.2. Planning and Design*

- Develop a survey of facilities to identify current status/condition of buildings.
- Require a LEED Silver rating or higher (or a standard equivalent) for DOT government buildings and leases, to the extent possible or where appropriate.

#### *1.2.3. Training and Awareness*

- Implement awareness program to promote energy conservation and energy efficiency, and distribute information on best practices through awareness and outreach programs across the OAs.
- Share Annual Energy Report with other stakeholders to ensure transparency and create awareness.
- Communicate goals to management on energy consumption and identify opportunities for improvement.
- Provide management training and tools for telework and hotelling principles.
- Where possible and appropriate, provide real time environmental performance data to all building occupants to encourage shared conservation goals.

#### *1.2.4. Buildings*

- Continue to reduce facility energy consumption through the use of energy conservation measures (ECMs), energy audits, ESPCs and UESCs.
- Continue to produce on-site renewable energy and reduce energy purchases from off-site sources.
- Continue to institute whole building performance targets that take into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the Energy Star® targets for new construction and major renovation, where applicable.
- Develop processes and technologies for tracking and monitoring energy consumption.
- Develop an Operations and Maintenance (O&M) program that includes all aspects of running a building over the course of its useful life.
- Install building level electricity meters in new major construction and renovation projects to track and continuously optimize performance. Per EISA Section 434,

include equivalent meters for natural gas and steam, where natural gas and steam are used.

- Install real time energy metering at all high priority facilities.
- Reduce energy through equipment replacement and modernization.
- Install separate meters at leased facilities to track energy efficiency.

#### *1.2.5. Fleet*

- Identify the percentage and numbers of alternate fuel acquisitions in non-alternative fuel locations to assist DOT in reducing alternative fuel vehicle waivers from 10 percent to 5 percent and utilize conventional fuel efficient vehicles where no alternative fuel infrastructure exists.

#### *1.2.6. Facility Tracking and Reporting*

- Develop a process for capturing and managing utility expenses at facilities.
- Perform energy audits to reduce energy consumption and water and renewable energy.
- Compare actual performance data from the first year of operation with the energy design target, preferably by using Energy Star® Portfolio Manager for building and space types covered by Energy Star®.
- Utilize a fleet monitoring data base to track usage and daily miles of vehicles, and track performance to assist DOT operating administrations in meeting fleet management goals.

### **1.3. Long-Term Initiatives**

#### *1.3.1. Policy and Guidance*

- Identify, collect and consolidate best management practices for reducing Scope 1 and 2 GHG emissions and develop guidance documents.
- Implement building sustainability policies and guidance.

#### *1.3.2. Planning and Design*

- Conduct facilitated workshops with key stakeholders to develop and implement strategies for long-term initiatives to achieve DOT Scope 1 and 2 emissions reduction goals.
- Develop technology to drive innovation to meet the goals taking into consideration to different geographic areas where DOT operates.

#### *1.3.3. Training and Awareness*

- Develop a center of excellence for subject matter experts that can address energy efficiency, HPSB, LEED, ESPCs, UESCs, fleet management, waste management, pollution prevention, and green procurement issues across DOT.
- Develop an education and awareness program for performance contracts (e.g., ESPCs, UESCs).

#### *1.3.4. Buildings*

- Expand performance contracts (e.g., ESPCs, UESCs ) throughout DOT

#### *1.3.5. Fleet*

- Introduce new vehicle technology into fleet.

**1.3.6. Facility Tracking and Reporting**

- Develop a dashboard system for communicating energy monitoring results and status of Scope 1 and 2 reduction goals.
- Maximize use of meters and data available to meet energy intensity reductions.

**d. Positions –**

- Establish internally or acquire external GHG subject matter experts.
- Hire LEED accredited experts for technical support.
- Improve functionality of existing systems or develop a new data management system to capture facility and energy data and other EO requirements, and include best practices.
- Contract fleet consulting services to provide technical expertise

**e. Planning table –**

Scope 1 and 2 GHG emissions reduction goals

	SCOPE 1&2 GHG TARGET	Unit	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	....	FY 20
Buildings	Energy Intensity Reduction Goals (BTU/SF reduced from FY03 base year)	%	15%	18%	21%	24%	27%	30%	hold	....	hold
	Planned Energy Intensity Reduction (BTU/SF reduced from FY03 base year)	%	15%	18%	21%	24%	27%	30%	hold		hold
	Renewable Electricity Goals (Percent of electricity from renewable sources)	%	5%	5%	5%	7.5%	hold	hold	hold	hold	hold
	Planned Renewable Electricity Use (Percent of electricity from renewable sources)	%	5%	5%	5%	7.5%	Hold	Hold	Hold	Hold	Hold
Fleet	Petroleum Use Reduction Targets (Percent reduction from FY05 base year)	%	10%	12%	14%	16%	18%	20%	22%	....	30%
	Planned Petroleum Use Reduction (Percent reduction from FY05 base year)	%	10%	12%	14%	16%	18%	20%	22%		30%
	Alternative Fuel Use in Fleet AFV Target (Percent increase from FY05 base year)	%	61%	77%	95%	114%	136%	159%	hold	.....	hold
	Planned Alternative Fuel Use in Fleet AFV (Percent increase from FY05 base year)	%	61%	77%	95%	114%	136%	159%	Hold		Hold
	Other, as defined by agency	?									
	Scope 1 & 2 - Reduction Target (reduced from FY08 base year)	%	1%	3%	5%	7%	9%	11%	13%	?	15%
	Leveraged Investment (funded through annually recurring existing budget items, such as capital improvement, O&M, etc. or ARRA)	\$ M	?	?	?						
	Incremental Investment (funded through new program budget requests specific to this EO)	\$ M	?	?	?						
	Alternative Investment (funded through ESPC, UESC, EUL, PPA, rebates, or other funding assistance)	\$ M	?	?	?						

***f. Department status –***

DOT has founded the Transportation and Climate Change Clearinghouse (TCCC) to be the focal point of technical expertise on transportation and climate change. Through strategic research, policy analysis, partnerships, and outreach, the Center creates comprehensive and multi-modal approaches to reduce transportation-related greenhouse gases and to mitigate the effects of global climate change on the transportation network. The Center researches transportation strategies and technologies to reduce greenhouse gases, identifies facilities that may be at risk from possible effects of climate change and climate anomalies, and develops an array of tools to assess the transportation system's ability to adapt to variances in global climate.

DOT and the Operating Administrations seize many opportunities to recognize the accomplishments of its employees. Incentive awards are widely used to reward conscientious and innovative energy management activities implemented by employees. For example, each year the FAA awards an Administrator's Environmental Excellence Award and the FAA's Aeronautical Center received the 2009 White House Closing the Circle Award for its efforts in developing and implementing its Environmental Management System. In FY 2009, several Transportation employees received internal and external awards as a result of "partnering" with other federal agencies to implement energy and water conservation projects. Employees have received the FAA Administrator's Environmental Excellence Awards, the Department of Energy's Federal Energy and Water Management Awards and Energy Champion designations, the White House Closing the Circle Awards, and many other Departmental service awards. The agency continues to encourage the use of employee incentive programs to reward exceptional performance in implementing EO 13423.

DOT developed the High Performance and Sustainable Buildings Implementation Plan (SBIP), which provides DOT policy for achieving the high performance/sustainable buildings design goals of Executive Order (EO) 13423, "Strengthening Federal Environmental, Energy, and Transportation Management" and building energy and water requirements of the Energy Independence and Security Act (EISA). The SBIP describes how DOT will support the goals of EO 13423 and EISA in 1) the design, construction, and maintenance and operation practices of all new facilities and major renovation projects and 2) the maintenance and operation practices of existing facilities. (Performance and Sustainable Buildings Implementation Plan (SBIP))

DOT has implemented a number of sustainable building initiatives, which include installing several sustainable features (e.g., green roofs, solar array systems, energy efficient fluorescent lighting, new boilers and HVAC systems, geothermal systems, and state of the art metering).

DOT has met the OMB Scorecard requirement for reducing petroleum by 6 percent annually for the last four years and is on track to reduce 20 percent by 2015. The Department has instructed its sub-organizations to maximize the use of public transportation, consolidate deliveries, utilize short term GSA leasing, make use of the Department's shuttle program, and requisition alternate fuel vehicles where alternate fuels are located to reduce petroleum consumption. DOT also utilizes a database to project the amount of petroleum reduction by each sub-organization and assist OAs in meeting their goals.

DOT has standard electric meters installed at most of its buildings where it is responsible for paying for electricity directly. The un-metered buildings where DOT pays for electricity are estimated to contribute <1 percent of total DOT energy consumption. Progress towards advanced metering continues to be a priority for DOT and its Operating Administrations. Additionally, training has been provided on metering strategies and equipment using the greatest amount of electrical power has been identified.

## 2. GOAL 2: Scope 3 Greenhouse Gas Reduction

Executive Order (EO) 13514 defines Scope 3 greenhouse gas (GHG) emissions as emissions from sources not owned or directly controlled by a federal agency, but related to agency activities, services, and employee travel and commuting. However, Scope 3 emissions are the consequence of agency activities. For this reason, the Department of Transportation (DOT) is committed to reduce emissions beyond its own organizational boundaries and to influence the behavior of its employees and suppliers toward actions that reduce GHG emissions and protect the climate.

DOT submitted an overall Scope 3 reduction target, in addition to reduction targets for each Scope 3 category, to the CEQ Chair and the OMB Director on June 2, 2010. These reduction goals were calculated using the Scope 3 target tool developed by the Office of the Federal Environmental Executive (OFEE).

The reduction in business travel and commuting by DOT employees will be the cornerstones of the strategy for reducing the agency's scope 3 GHG emissions. The agency has identified a goal of reducing employee travel emissions by 10 percent by 2020. To achieve this goal, the organization is going to implement a portfolio of technology to remove the burden of place-based work and fully enable employees to work from remote locations. For example, the agency has identified several opportunities to reduce employee business travel and commuting emissions through the use of video and web conferencing technology. As a result, the organization has pledged to purchase state-of-the-art technology to reduce employee business travel and commuting emissions. Additionally, the Department plans to pilot test a hotelling approach to space management combined with telework and compressed work week strategies to determine the potential for better utilizing existing office space, or reducing necessary office space.

### **a. Goal description –**

To fulfill the requirements of EOs 13423 and 13514, DOT will plan and take action working across the OAs to:

- Develop and implement innovative policies and practices to reduce overall agency Scope 3 GHG emissions by 11 percent by 2020 relative to an FY 2008 baseline.
  - 1) Sub-Target – Reduce emissions from Federal business travel and commuting by 10 percent by 2020.
- Improve data accuracy and overall data collection and analysis methods related to Scope 3 GHG emissions.
- Divert at least 50 percent of non-hazardous solid waste, excluding construction and demolition (C&D) debris, by the end of fiscal year 2020.
- Divert at least 50 percent of construction and demolition materials and debris by the end of fiscal year 2020.

### **b. Department lead for goal –**

The SSO, as the designated Department lead, will direct the activities of the Senior Advisory Board for target development, implementation and oversight.

### **c. Implementation methods –**

DOT will achieve the goals listed above by addressing the following Scope 3 emissions categories, which were included when establishing the reduction targets (above):

- Federal employee travel
  - Business air travel

- Business ground travel
- Federal employee commuting
- Contracted waste disposal
  - Contracted solid waste disposal
  - Contracted wastewater treatment
- Transmission and distribution (T&D) losses from purchased electricity

Using an integrated higher-tier Environmental Management System, DOT will identify and address additional Scope 3 categories in the future as the methodologies, policies, and data sources for such categories are developed, as required by the CEQ Chair and the OMB.

*Federal employee travel*

- Implement policies and activities to improve data accuracy and overall data collection and analysis methods related to federal employee travel.

*Contracted waste disposal*

- Divert at least 50 percent of non-hazardous solid waste, excluding construction and demolition debris, by the end of fiscal year 2020
- Divert at least 50 percent of construction and demolition materials and debris by the end of fiscal year 2020

*Transmission and distribution losses from purchased energy*

- Reduce transmission and distribution system losses by increasing use of renewable energy sources.

DOT has developed Scope 3 emissions reduction strategies that include short-, medium-, and long-term initiatives to accomplish these goals.

## **2.1. Short-Term Initiatives**

### *2.1.1. Policy and Guidance*

- Issue administrative order to all employees requiring the completion a transportation survey. Using survey data to establish initial baseline of employees' commuting characteristics, including mode of transportation used, distance traveled, and frequency of commute.
- Develop guidance for employees on 'preferred' (greener) modes of transportation and require consideration of all modes of transportation (both rail and air) costs and benefits (including overall cost, value of employee time, emissions, etc.) when submitting travel authorizations.
- Establish a DOT-wide recycling policy.
- Create awareness of DOT-wide double-sided copying and printing policy included in DOT Electronic Stewardship Plan.

### *2.1.2. Planning and Design*

- Explore, promote and expand additional flexible work place and schedule options, including hotelling, compressed work week scheduling, telework centers, adding a combined telework and compressed work week option for appropriate employees.
- Develop a plan to capture employee commuting benefits/subsidies offered by DOT to promote the use of public transportation.



- Develop a program to monitor and measure telecommuting benefits and report to senior management monthly.
- Develop methodology to make DOT a paperless office and establish performance metrics to measure progress.
- Monitor progress and establish metrics for employee commuting in the Department's EMS communications and monitoring system and internal scorecard that evaluates EO and other Sustainability requirements and objectives across all 12 operating administrations and OST, twice annually.

#### *2.1.3. Training and Awareness*

- Increase awareness of DOT's telework program through a communications strategy that includes e-mails, electronic newsletters, webinars (net meetings), eLMS training modules, and briefings.
- Develop training on productivity management for both managers and employees to facilitate manager acceptance and improve productivity for all employees, both in the office and working at home.
- Create a DOT-wide greening initiative, that includes energy conservation and waste reduction, to foster culture change that is directed to all employees with an emphasis on key stakeholders and decision-makers.

#### *2.1.4. Federal Employee Travel*

- Encourage employees to increase utilization of conference calls, videoconference technology, webinars, and web conferences, including real-time document sharing and modification capabilities.
- Provide tools which encourage employees to request more fuel-efficient rental vehicles.
- Encourage managers and employees to telework, use alternative work schedules, utilize public transportation, bike, or walk to work.

#### *2.1.5. Contracted waste disposal*

- Require all new and renewed waste management and janitorial contracts include recycling of waste streams, and require contractors to measure and report waste disposal and recycling rates.
- Calculate cost savings from going paperless; which could be used for investing in other recycled products.
- Recycle mixed office paper, which includes nearly all waste paper generated in an office, such as white paper (copier, printer, and notepaper), colored paper, file folders, and envelopes.
- Encourage sensible practices for office paper usage, such as (a) reviewing documents on-line, rather than printing them out; (b) providing information electronically instead of through paper; and (c) distributing paper documents through routing rather than through duplication.
- Set double-sided copying or printing as the default mode for all copiers and printers DOT-wide.
- Quantify amount of office paper reduction by mode to increase accountability. Compare the quantities purchased during a baseline period (i.e., before implementation of the double-sided copying/printing policy) and a post-implementation period to monitor changes in consumption of paper from double sided printing.
- Evaluate lifecycle of office products prior to purchasing.

- Quantify number of DOT employees and develop a method to calculate site off wastewater treatment.
- Use alternative technologies (e.g., websites) to disseminate information to stakeholders instead of using paper, pamphlets, etc.

#### *2.1.6. Transmission and distribution losses from purchased energy*

- Reduce T&D emissions at DOT by reducing facility energy consumption through the use of energy conservation measures (ECMs), energy audits, commissioning, Energy Savings Performance Contracts (ESPCs) and Utility Savings Energy Contracts (USECs).
- Produce on-site renewable energy and reduce energy purchases from off-site sources.

#### *2.1.7. Facility Tracking and Reporting*

- Improve data accuracy and overall data collection and analysis methods.
- Communicate results/conclusions/analysis of data collection to employees to create awareness and change behavior.
- Develop an employee commuting and business travel dashboard to communicate key goals, requirements, etc.
- Utilize GSA's Travel Management Information System (TMIS) that automatically calculates air travel and rental car emissions based on travel card transaction data for all of DOT's business travel.
- Utilize the emissions calculation tool for aviation (AEDT) developed by FAA as the future business travel program.
- Use technology to collect information not paper surveys.
- Develop a community of interest to capture best practices (e.g., green alternatives for traveling) and share implementation strategies.
- Identify POCs for procurement to make sure people know who to contact to get information on products and services.

## **2.2. Medium-Term Initiatives**

#### *2.2.1. Federal Employee Travel*

- Utilize on-line booking agent GovTrip to collect data and request for modifications to GovTrip to provide end point data and incorporate fuel efficiency requirements to support tracking progress and calculate emission reductions.
- Launch a DOT-wide share space (hotelling) program pilot; develop metrics, and measure costs and benefits.
- Launch a program for alternative modes of transportation (e.g., bike to work program).
- Assess and develop new technologies (e.g., higher quality videoconferencing, user friendly IT tools to support videoconferencing from desktops) to reduce trips. Current technologies (e.g., web conferencing) may be limiting.
- Develop productivity management tools for employees and managers to promote telework.
- Provide secure access to allow employees to login from remote locations to DOT systems/secure lines.

#### *2.2.2. Contracted waste disposal*

- Adopt best practices for all other office supplies management, besides paper.
- Capture waste stream by mass/weight and type as opposed to by volume to facilitate comparison DOT-wide and to achieve compliance with Executive Orders.
- For leased buildings (without delegated authority), request waste generation weight by streams.
- Review existing and newly issued waste management and janitorial contracts to ensure that recycling provisions are being included.

#### *2.2.3. Transmission and distribution losses from purchased energy*

- Reduce T&D emissions at DOT by reducing facility energy consumption through the use of energy conservation measures (ECMs), energy audits, Energy Savings Performance Contracts (ESPCs) and Utility Savings Energy Contracts (USECs).
- Where practical and economical, switch to direct fuel usage for energy needs that have lower net GHG emissions.
- Produce on-site renewable energy, and reduce energy purchases from off-site sources.

### **2.3. Long-Term Initiatives**

#### *2.3.1. Planning and Design:*

- Conduct facilitated workshops with key stakeholders to develop and implement strategies for long-term initiatives to achieve DOT Scope 3 emission reduction goals.

#### *2.3.2. Policy and Guidance*

- Identify, collect and consolidate best management practices for reducing Scope 3 GHG emissions and develop guidance document.
- Develop a center of excellence for subject matter experts that can address Scope 3 emissions across DOT.

#### *2.3.3. Training and Awareness*

- Enhance senior management awareness of the need for enforcement and support of existing telework and hotelling practices.
- Share Annual Energy Report with other stakeholders to create awareness and communicate goals to management on energy consumption and identify opportunities for improvement.
- Institute process to solicit ideas from employees on regular basis.

#### **d. Positions –**

- Establish internal or acquire external greenhouse gas subject matter expertise.

**e. Planning table –**  
Scope 3 GHG emission reduction goals.

SCOPE 3 GHG TARGET	Units	FY 10	FY 11	FY 12	FY 13	FY 14	....	FY 20
Overall Agency Scope 3 Reduction Target (reduced from FY08 base year)	%	1%	1%	1%	1%	2%		11%
Sub-Target for Federal Employee Travel	%	1%	1%	1%	1%	2%	....	10%
Sub-Target for Contracted Waste Disposal	%	3%	3%	3%	4%	4%	....	50%
Sub-Target for Transmission and Distribution Losses from Purchased Energy	%	1%	1%	1%	1%	2%	....	7.7%
Other, as defined by agency	%	?	?	?	?	?	....	?
Leveraged Investment (funded through annually recurring existing budget items, such as capital improvement, O&M, etc. or ARRA)	\$ M	?	?	?				
Incremental Investment (funded through new program budget requests specific to this EO)	\$ M	?	?	?				
Alternative Investment (funded through ESPC, UESC, EUL, PPA, rebates, or other funding assistance)	\$ M	?	?	?				

Note: Percentage reductions shown above are estimated average annual reductions from previous fiscal year.

**f. Department status –**

To reduce GHG emissions with employee commuting, DOT has a telework policy and program in place. DOT has designated telework coordinators who work with the Office of Personnel Management to implement DOT’s telework program. This program provides policy, guidance, leadership, planning, and consulting services for telecommuting in DOT. DOT offers online telework training for managers and employees and a mandatory IT security training for all teleworkers. In addition, DOT offers other resources for performance management, including guidance documents, websites and a work plan structure agreement that provides a framework for the discussion that needs to take place between the manager and the employee about expectations.

DOT has a viable survey to assess current Federal employee commuter GHG emissions. The DOT “Commuter Choice Survey” has been recognized by CEQ and OMB as a method to measure employee commuter GHG emissions and to assess receptivity towards adopting alternative working arrangements and lower impact commutes. The Commuter Choice Survey could be further refined and issued Department-wide via a web based version.

DOT formed a bicycle commuter group in 2007 for commuters who bike or walk to DOT HQ. The group meets monthly to discuss topics of interest and to develop methods which encourage and promote wider participation in bicycling and walking as modes of

transportation. The group shares information about commutes with cyclists and other interested parties and is working to improve bicycle facilities for people who work at DOT HQ. On May 24, 2010 Assistant Secretary for Administration Linda Washington signed a new transit benefit policy for bikers. The policy is the first of its kind, and grants up to \$20 per month for bicycle maintenance to DOT employees who bike to work. The goal is to encourage employees to choose transportation methods that improve air quality and personal health.

To reduce solid and hazardous waste disposition, DOT has developed a Green Procurement Plan (GPP) to enhance and sustain the DOT mission through cost effective acquisition that achieves compliance and reduces resource consumption and solid and hazardous waste generation. DOT's procurement of green products and services contributes to sound management of the Department's financial resources, natural resources, and energy. In its day-to-day operations, DOT is committed to be environmentally and energy conscious in its selection and use of products and services. The GPP demonstrates DOT's commitment to environmental stewardship by becoming a model consumer of green products and services.

DOT has implemented a Green Procurement Compliance System to ensure the GPP is being implemented. The Green Procurement Compliance System was initiated to 1) determine if the goals established by the Senior Sustainability Officer in the GPP are being implemented and progress made; and 2) provide a mechanism to provide continual improvement in contracting and using environmentally friendly materials and services.

### 3. GOAL 3: Develop and Maintain Department Comprehensive Greenhouse Gas Inventory

Executive Order (EO) 13514, Federal Leadership in Environmental, Energy, and Economic Performance, establishes “an integrated strategy towards sustainability in the Federal Government and makes reduction of greenhouse gas (GHG) emissions a priority for Federal agencies.” Among other provisions, EO 13514 requires agencies to “measure, report, and reduce greenhouse gas emissions from direct and indirect activities.” Section 2, EO 13514 establishes a timeline for Federal agencies to set GHG reduction targets, and develop and report inventories.

The Department of Transportation (DOT) has set aggressive greenhouse gas reduction targets to reduce GHG emissions from Scope 1 and 2, and Scope 3 sources by 12.3 percent and 15 percent, respectively, by FY 2020 relative to a FY 2008 baseline. The Department used the Development of Agency Reduction Targets (DART) and Scope 3 Target tools created by the Office of the Federal Environmental Executive (OFEE) to calculate these reduction targets.

DOT will implement a variety of greenhouse gas management strategies and tools to reach the reduction targets identified above and will develop a comprehensive greenhouse gas inventory to set the foundation of a successful GHG Management and Accounting Program.

#### **a. Goal description –**

To fulfill the requirements of EOs 13423 and 13514, DOT will plan and take action working across the OAs to:

- Develop and maintain a comprehensive inventory of absolute GHG emissions across all three scopes for FY 2010.
- Report GHG emissions data to CEQ Chair and OMB Director by January 31, 2011 for their FY 2008 base year and FY 2010 activities, and by January 31 annually thereafter for the preceding fiscal year.

#### **b. Department lead for goal –**

The Office of Administrative Policy in the Office of the Secretary, as the designated Department lead, will direct the activities for greenhouse gas management and accounting.

#### **c. Implementation methods –**

To develop a comprehensive greenhouse gas management and accounting program, DOT will:

- Follow guidance provided by CEQ, DOE and OMB to accurately and consistently quantify and account for GHG emissions from all Scope 1, 2, and 3 sources and track progress against GHG reduction goals.
- Use accepted accounting and reporting methodologies for calculating Scope 1, Scope 2, and specified Scope 3 emissions established by the Federal government.
- Use DOE’s Electronic GHG Reporting Portal to submit the GHG inventories in a consistent and accurate manner.
- DOT has developed greenhouse gas management strategies that include short-, medium-, and long-term initiatives to accomplish these goals.

### 3.1. Short-Term Initiatives

#### 3.1.1. Policy and Guidance

- Develop policy and guidance to develop a comprehensive GHG Inventory.
- Develop and implement innovative policies and practices to address GHG emissions unique to its operations.
- Identify needs and develop GHG management policies and guidance.
- Provide guidance to ensure OAs consult with appropriate agency personnel to determine the applicability and requirements of state programs.

### *3.1.2. Planning and Design*

- Identify data gaps and limitations.
- Plan for improved data information systems.
- Establish methodology for calculating Scope 1, Scope 2, and specified Scope 3 emissions.
- Account for sequestration and emissions of GHGs resulting from Federal land management practices.
- Identify responsibility and authority of those responsible for GHG inventory development.
- Identify and review organizational boundaries.
- Identify and review GHG sources and sinks.

### *3.1.3. Training and Awareness*

- Provide, and identify needs for, appropriate training for members of the inventory development team.
- Develop training and awareness to ensure that appropriate agency programs and technical personnel are knowledgeable on the greenhouse gas management and accounting requirements of EO 13514.
- Communicate goals to management on GHG emissions reductions and identify opportunities for improvement.
- Establish web sites for employee discussion forums and Department policies.
- Develop a process to solicit ideas from employees on a regular basis.
- Create a DOT-wide greening initiative, that includes energy conservation and waste reduction, to foster culture change that is directed to all employees with an emphasis on key stakeholders and decision-makers.
- Develop web-based training modules in eLMS on GHG management awareness, energy efficiency and water management training to maintain systems and modify behavior.

### *3.1.4. Facility Tracking and Reporting*

- Develop a community of interest to capture sustainable best practices and share implementation strategies.

## **3.2. Medium-Term Initiatives**

### *3.2.1. Policy and Guidance*

- Develop or update sustainability policies and guidance contracts to reflect the new GHG management and accounting requirements of the EO 13514.

### *3.2.2. Planning and Design*

- Implement improved data information systems.

- Identify appropriate opportunities to revise the FY 2008 baseline to address significant changes in factors affecting DOT emissions, such as reorganization and improvements in accuracy of data collection and estimation procedures or other major changes that would otherwise render the initial baseline information unsuitable.
- Pursue opportunities with vendors and contractors to address and incorporate incentives to reduce GHG emissions.

#### *3.2.3. Training and Awareness*

- Implement awareness program to promote energy conservation and energy efficiency, and distribute information on best practices through awareness and outreach programs across the OAs.
- Share Annual Energy Report with other stakeholders to ensure transparency and create awareness.
- Communicate goals to management on energy consumption and identify opportunities for improvement.

#### *3.2.4. Facility Tracking and Reporting*

- Develop a process for capturing, monitoring, and managing utility expenses at facilities.
- Perform energy audits to reduce energy consumption and water and renewable energy.
- Work with Federal vendors and contractors to provide information that will assist in tracking and reducing GHG emissions related to the supply of products and services to the Government.

### **3.3. Long-Term Initiatives**

#### *3.3.1. Policy and Guidance*

- Identify, collect and consolidate best management practices for reducing GHG emissions and develop guidance documents.

#### *3.3.2. Planning and Design*

- Conduct facilitated workshops with key stakeholders to develop and implement strategies for long-term initiatives to achieve DOT GHG emissions reduction goals.

#### *3.3.3. Training and Awareness*

- Develop a center of excellence for subject matter experts that can address energy efficiency, HPSB, LEED, ESPCs, UESCs, fleet management, waste management, pollution prevention, and green procurement issues across DOT.
- Develop an education and awareness program for performance contracts (e.g., ESPCs, UESCs).

#### *3.3.4. Facility Tracking and Reporting*

- Develop a dashboard system for communicating energy monitoring results and status of GHG emissions reduction goals.

#### **d. Positions –**

- Establish internal or acquire external GHG subject matter experts.



- Improve functionality of existing systems or develop a new data management system to capture facility and energy data and other EO requirements, and include best practices.

**e. Planning table –**

The Department will:

- Prepare and submit a FY 2008 Base Year and FY 2010 Comprehensive inventory of absolute GHG emissions, including Scope 1, Scope 2, and specified Scope 3 emissions by January 31, 2011.
- Submit comprehensive inventories of absolute GHG emissions, including Scope 1, Scope 2, and specified Scope 3 emissions annually, for FY 2011 onward, at the end of January for the preceding fiscal year.

**f. Department status –**

DOT has founded the Transportation and Climate Change Clearinghouse (TCCC) to be the focal point of technical expertise on transportation and climate change. Through strategic research, policy analysis, partnerships, and outreach, the Center creates comprehensive and multi-modal approaches to reduce transportation-related greenhouse gases and to mitigate the effects of global climate change on the transportation network. The Center researches transportation strategies and technologies to reduce greenhouse gases, identifies facilities that may be at risk from possible effects of climate change and climate anomalies, and develops an array of tools to assess the transportation system's ability to adapt to variances in global climate.

#### 4. GOAL 4: High-Performance Sustainable Design/Green Buildings

The Department is committed to achieving the high performance/sustainable buildings (HPSB) design goals of Executive Orders (EOs) 13423 and 13514. DOT will make all efforts to support these goals during the design, construction, maintenance and operation of all new and existing facilities and major renovation projects.

DOT will systematically review, update and modify its real property portfolio based on the HPSB goals identified below. DOT will establish a new HPSB program responsible for the identification, implementation and monitoring of projects and activities undertaken to meet the HPSB goals. DOT will create awareness of the HPSB principles among employees and train key stakeholders. DOT will develop a single-source HPSB data system integrating utility consumption, project and physical asset information building on existing systems. The HPSB goals will be integrated with other EO goals, e.g., renewable energy, to achieve greater system performance and efficient implementation. These strategies will be refined and enhanced in future annual updates of this Plan.

##### Goal Performance Review:

###### **a. Goal description –**

To fulfill the requirements of EOs 13423 and 13514, DOT will plan and take action working across the OAs to:

- Design, beginning in FY 2020, all new Federal buildings to achieve zero-net energy by FY 2030.
- Ensure all new construction, major renovation or repair and alteration of federal buildings comply with, “Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (Guiding Principles).”
- Meet the HPSB Guiding Principles by FY 2015 in at least 15% of agency’s existing buildings and building leases [5,000 GSF threshold for existing buildings and building leases].
- Demonstrate annual progress toward 100% conformance with Guiding Principles for entire building inventory.
- Demonstrate use of cost-effective, innovative building strategies to minimize energy, water and materials consumption.
- Manage existing building systems to reduce energy, water and materials consumption in a manner that achieves a net reduction in agency deferred maintenance costs.
- Optimize performance of the agency’s real property portfolio – examine opportunities to decrease environmental impact through consolidation, reuse and disposal of existing assets prior to adding new assets.

###### **b. Department lead for goal –**

The head of the Real Property Council, as the designated Department lead, will direct the activities of the Real Property Council, facilities managers, and environmental managers for target development, implementation and oversight.

###### **c. Implementation methods –**

DOT will implement the goals listed above by addressing: policy and guidance, planning and design, construction, operation and maintenance, tracking and reporting for new buildings, major renovations, and buildings identified as best value opportunities for upgrading to meet the HPSB guiding principles and other goals of EO 13514.

*Policy and Guidance:*

- DOT policy for achieving the high performance/sustainable buildings design is defined in the High Performance and Sustainable Buildings Implementation Plan (SBIP). The SBIP describes how DOT will support the goals, the design, the construction, and the maintenance and operation practices of all new facilities and major renovation projects, and the maintenance and operation practices of existing facilities.
- Form a HPSB community of subject matter experts across DOT Operating Administrations to develop policies and guidance to implement EO, and comply with related statutory requirements.

*Planning and Design:*

- Develop a collaborative HPSB planning and design process that integrates a cross functional team in all stages of the project.
- Establish a process for identifying and prioritizing the best value target buildings for meeting the HPSB, renewable energy and greenhouse gas requirements.
- Based on the outcome of the above process, establish a portfolio of the targeted buildings for intervention and inclusion in the HPSB program and update the Sustainable Buildings Plan of Action and Milestones (POAM) document to include this process and portfolio for achieving HPSB status for all targeted buildings in the HPSB portfolio by 2020, including the programs and resources that will be required to reach all objectives.
- Establish facility performance goals for siting, energy, water, materials, and indoor environmental quality along with other comprehensive design and EO goals that will result in meeting the HPSB goals throughout the lifecycle of the building.

*Construction of New building and Major Renovation*

- Implement the SBIP POAM
- Incorporate the HPSB Guiding Principles in all new buildings and major renovation projects and leased facilities where DOT has designated authority.
- Incorporate sustainable principles into all acquisitions contracts for construction and leases.
- Require a LEED Silver rating or higher (or a standard equivalent) for new DOT government buildings and leases, to the extent possible or where appropriate.

*Operational and Maintenance (O&M):*

- The O&M program shall:
  - Measure and benchmark building O&M performance.
  - Set O&M annual performance goals for portfolio assets.
  - Conduct audits for priority buildings and actively monitor space and adjust requirements (i.e., modifying the HVAC, lighting, electrical, telecommunications, safety, housekeeping, and building automation control systems) to changing occupant needs.
  - Repair, upgrade, and recommission building systems to ensure that they are working to meet current needs and are on track to meet HPSB goals.
  - Extend the useful service life of materials and equipment.
  - Prevent disruptive failures in the building.

*Facility Tracking and Reporting*

- Update sustainable building inventory data in the Federal Real Property Profile (FRPP) database. The FRPP now contains a “sustainability” data element to be reported on all building assets.

DOT has developed a strategic approach that includes short-, medium-, and long-term initiatives to accomplish these HPSB goals.

**4.1. Short-Term Initiatives***4.1.1. Policy and Guidance*

- Identify all buildings that meet the HPSB Guiding Principles in the newly created Sustainable Buildings field in the REMS (Real Property) Database.
- Establish the HPSB portfolio of best value target buildings.
- Identify best practices and develop building sustainability implementation guidance document.
- Identify gaps in policies, guidance documents, criteria, contracts, leases, training and other areas of the real property, facilities management, and sustainable building programs.
- Establish a whole building performance target that takes into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the Energy Star® targets for new construction and major renovation and leases.
- Require a LEED Silver rating or higher (or a standard equivalent) for DOT government buildings and leases, to the extent possible or where appropriate.

*4.1.2. Planning and Design*

- Conduct baseline energy audits at DOT sites to determine existing and future energy sources and energy consumption.
- Include Renewable Energy and space needs assessments considerations in DOT Sustainable Building Program.
- Create a baseline of facilities that are >5000 sq ft and identify exemptions for technical facilities and/or data centers to support the business case.
- Conduct comprehensive assessment on the top 15 percent or more of the buildings having the highest potential for meeting the Guiding Principles.
- Build a new program with new and existing FTEs and contract subject matter experts to identify, prioritize and execute a building upgrade program to meet the EO and HPSB goals, including a highly trained and experienced ‘performance contracting’ center of excellence that includes facility managers, energy managers and procurement specialists.
- Investigate (or expand) performance contracts (e.g., energy savings performance contracts (ESPCs), utility energy services contracts (UESCs)) as a means to integrate energy-savings technologies and infrastructure in a cost-effective and efficient manner.

*4.1.3. Training and Awareness*

- Develop training and awareness initiatives to ensure that appropriate agency programs and technical personnel are knowledgeable on the energy and sustainable buildings requirements of EISA, EO 13514 and the SBIP.
- Communicate goals to senior management and facility managers on energy consumption and identify opportunities for improvement.

- Develop a system to solicit ideas from employees on a regular basis.

#### *4.1.4. Construction of New building and Major Renovation*

- Incorporate the Guiding Principles HPSB in all new buildings and major renovation projects.
- Develop HPSB specifications and model contract templates for inclusion in construction and leasing projects for all DOT buildings.

#### *4.1.5. Operational and Maintenance:*

- Develop a survey of facilities to identify current status/condition of buildings.
- Analyze building data and identify top 15 percent of building inventory that are the best value candidates for upgrading to achieve the HPSB Guiding Principles.
- Conduct energy assessments of top 15 percent of buildings most qualified to meet the Guiding Principles and prioritize implementation.

#### *4.1.6. Facility Tracking and Reporting*

- Request OMB exemption for specific building types that are not appropriate for HPSB, e.g., unstaffed equipment shelters, from the DOT inventory when calculating progress toward the 15 percent goal by 2015.
- Conduct periodic assessments of the sustainable buildings program and progress.

## **4.2. Medium-Term Initiatives**

### *4.2.1. Policy and Guidance*

- Develop or update building sustainability policies and guidance contracts, leases, training and other areas of the sustainable building program.
- Include criteria encouraging lease clauses and provisions that support the Guiding Principles according to the High Performance and Sustainable Buildings Guidance.
- Incorporate criteria for sustainable design and development, energy efficiency, and verification of building performance into build-to-suit lease solicitations where DOT has delegated authority.
- Develop processes to eliminate the use of ozone depleting compounds in existing buildings where alternative environmentally preferable products are available, consistent with either the Montreal Protocol and Title VI of the Clean Air Act Amendments of 1990, or equivalent overall air quality benefits that take into account lifecycle impacts.
- Develop hotelling, teleworking and other space management approaches to better utilize or reduce existing building space and achieve reduced costs of DOT facility operations.

### *4.2.2. Planning and Design:*

- Meet at least 30 percent of the hot water demand through the installation of solar hot water heaters, when lifecycle cost effective.
- Develop model lease on HPSB and assess results in a geographic area with few vendors to generate market demand and create a change in the market place for more sustainable buildings available for lease by the government.
- Require a LEED Silver rating or higher (or a standard equivalent) for DOT owned buildings and leases, to the extent practicable.

### *4.2.3. Training and Awareness*

- Develop and institute a change management process including awareness training to ensure HPSB goals are being implemented and measured.
- Share Annual Energy Report with other stakeholders to ensure transparency and awareness on results.
- Continue communicating goals to senior management and facility managers on energy consumption and identify opportunities for improvement.
- Institute a system to solicit ideas from employees on regular basis.
- Provide management training and tools for telework and hotelling principles.
- Develop an education and awareness program for performance contracts (e.g., ESPCs, UESCs).

#### *4.2.4. Construction of New building and Major Renovation*

- Institute whole building performance targets that take into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the Energy Star® targets for new construction and major renovation, where applicable.
- Include energy savings and or cost avoidance information when designing new buildings.

#### *4.2.5. Operational and Maintenance:*

- Develop processes and technologies for tracking and monitoring energy consumption at facilities.
- Develop a process for capturing and managing utility expenses at facilities.
- Perform energy audits to reduce energy consumption and water and renewable energy.
- Install building level electricity meters in new major construction and renovation projects to track and continuously optimize performance. Per EISA Section 434, include equivalent meters for natural gas and steam, when natural gas and steam are used.
- Install real time energy metering at all high priority facilities.
- Expand performance contracts (e.g., ESPCs, UESCs) throughout DOT.

#### *4.2.6. Facility Tracking and Reporting*

- Compare actual performance data from the first year of operation with the energy design target, preferably by using Energy Star® Portfolio Manager for building and space types covered by Energy Star®.

### **4.3. Long-Term Initiatives**

#### *4.3.1. Policy and Guidance:*

- Update building sustainability policies and guidance.
- Develop a template that can be used in SOW for renovations or new construction that incorporates all HPSB Guiding Principles. The template should include energy and water requirements.
- Identify potential opportunities to integrate high performance sustainable building goals into the FAA NextGen program.

#### *4.3.2. Planning and Design:*

- Develop technology to drive innovation to meet HPSB goals addressing the regional considerations linked to different geographic areas where DOT operates.
- Develop a HPSB building plan based on size, age, etc.

#### *4.3.3. Training and Awareness*

- Develop a center of excellence for subject matter experts that can address HPSB issues across DOT.
- Develop a process to enhance senior management awareness of the need for enforcement and support of existing telework and hotelling practices.
- Continue to implement change management process, including awareness to ensure HPSB goals are met.
- Communicate goals to management on energy consumption regularly and identify opportunities for improvement.

#### *4.3.4. Construction of New building and Major Renovation*

- Implement five (HPSB) guiding principles into the design requirements for construction.
- Develop on-site renewable energy projects (e.g. photovoltaic installations).

#### *4.3.5. Operational and Maintenance:*

- Develop technology and processes to monitor and control electronically HPSB facilities.
- Expand performance contracts (e.g., ESPCs, UESCs) throughout DOT.

#### *4.3.6. Facility Tracking and Reporting*

- Develop a dashboard system for communicating energy monitoring results and status of HPSB goals.
- Maximize use of meters and data available to meet HPSB requirements.

#### **d. Positions –**

- Hire/Contract LEED accredited experts for technical support.
- Develop 'Performance Contracting' contract specialists
- Hire/Contract positions for HPSB program implementation
- Identify line item for HPSB in budget.

**e. Planning table –**

The Senior Advisory Board has identified and determined the following HPSB goals in the table below.

SUSTAINABLE HIGH PERFORMANCE BUILDINGS (Buildings Meeting Guiding Principles)	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Owned Facilities Targets	%	1%	2%	2%	2%	3%	10%
Leased Facilities Targets	%	1%	1%	1%	1%	1%	5
Total Facility Targets	%	2%	3%	3%	3%	4%	15%
Other, as defined by agency	?	?	?	?	?	?	?
Leveraged Investment (funded through annually recurring existing budget items, such as capital improvement, O&M, etc. or ARRA)	\$ M	?	?	?			
Incremental Investment (funded through new program budget requests specific to this EO)	\$ M	?	?	?			
Alternative Investment (funded through ESPC, UESC, EUL, PPA, rebates, or other funding assistance)	\$ M	?	?	?			

**f. Department status –**

To meet the HPSB goals identified above, DOT developed the High Performance and Sustainable Buildings Implementation Plan (SBIP), which provides DOT policy for achieving the high performance/sustainable buildings design goals of Executive Order (EO) 13423, “Strengthening Federal Environmental, Energy, and Transportation Management” and building energy and water requirements of the Energy Independence and Security Act (EISA). The SBIP describes how DOT will support the goals of EO 13423 and EISA in 1) the design, construction, and maintenance and operation practices of all new facilities and major renovation projects and 2) the maintenance and operation practices of existing facilities.

The SBIP guidance accomplishes the following: (1) Updates the Guiding Principles for Sustainable New Construction and Major Renovations, (2) establishes a separate Guiding Principles for Sustainable Existing Buildings, (3) clarifies reporting guidelines for entering information on Sustainability Data Element #25 in the Federal Real Property Profile (FRPP) database, and (4) explains how to calculate the percentage of buildings/square footage that are compliant with the Guiding Principles. DOT developed a calculation of percentage of each building in the inventory that complies with the Guiding Principle. The percentage was calculated in two ways, by building square footage and by number of buildings.

Additionally, DOT joined several Federal agencies in signing the Sustainable Buildings MOU on January 24, 2006. Issuance of EO 13423 on January 24, 2007, incorporated the goals and objectives of the MOU including the adoption of a common set of Guiding Principles for furthering environmental sustainability throughout the Federal government. There are five Guiding Principles: 1) employ integrated design principles; 2) optimize



energy performance; 3) protect and conserve water; 4) enhance indoor environmental quality; and 5) reduce environmental impact of materials.

DOT has conducted an initial assessment to target buildings agency-wide that have the greatest likelihood of meeting the Guiding Principles. The data is to be entered into DOT's Real Estate Management System (REMS) database. (1) The real property management, sustainable building inventory data will be reported in the Federal Real Property Profile (FRPP) database.

DOT has implemented a number of sustainable building initiatives, which include installing several sustainable features (e.g., green roofs, solar array systems, energy efficient fluorescent and light emitting diode (LED) lighting, new boilers and HVAC systems, geothermal systems, demand management systems, and state of the art metering).

## 5. GOAL 5: Regional and Local Planning

The Department of Transportation (DOT) is dedicated to enhancing regional and local planning. DOT will participate in regional transportation planning, align agency policies to increase effectiveness of local energy planning, incorporate sustainable building location into policy and planning. In addition, DOT will update agency policy and guidance to ensure that all Environmental Impact Statements (EISs) and Environmental Assessments (EAs) required under the National Environmental Policy Act (NEPA) to identify and analyze impacts associated with energy usage and alternative energy sources, and ensure coordination and consultation with Federal, State, Tribal and local management authorities during the NEPA process.

DOT will participate in regional and local transportation planning by integrating this key concept into current operating policy. Also, DOT will continue to build a center of excellence on Greenhouse Gases, Climate Change, Adaptation and Transportation vehicles and systems through its Transportation and Climate Change Clearinghouse (TCCC). Through the TCCC website, DOT will provide regional and local transportation planning leaders around the world access to state-of-the-art research and technical guidance surrounding this global issue. Internally, DOT will establish a 'green travel' policy which outlines carbon reduction strategies for employees on official travel, including recommendations for fuel-efficient vehicles and "green" lodging services. The following is an overview of the goals and short, medium, and long-term initiatives that will achieve these EO goals. The regional and local planning goals will be integrated with other EO goals (e.g., Sustainable Building requirements) to achieve greater overall achievement and efficiency of EO implementation. DOT will monitor progress and establish metrics via the Department's EMS communications and monitoring system and internal scorecard that evaluates EO and other Sustainability requirements and objectives across all 12 operating administrations and OST, semi annually. These strategies will be further refined in future annual updates of this Plan.

### **a. Goal description –**

To fulfill the requirements of EOs 13423 and 13514, DOT will plan and take action working across the OAs to:

- Incorporate participation in regional transportation planning (recognition and use of existing community transportation infrastructure) into existing policy and guidance.
- Align agency policies to increase effectiveness of local energy planning
- Incorporate sustainable building location into policy and planning for new Federal facilities and leases.
- Update agency policy and guidance to ensure that all Environmental Impact Statements and Environmental Assessments required under the National Environmental Policy Act (NEPA) for proposed new or expanded Federal facilities identify and analyze impacts associated with energy usage and alternative energy sources.
- 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.

### **b. Department lead for goal –**

The Senior Sustainability Officer (SSO), as the designated Department lead, will direct the activities of the Environmental Management System (EMS) Senior Advisory Board and other Department Directors for target development, implementation and oversight.

***c. Implementation methods –***

DOT will implement the goals listed above by:

- Developing policy and guidance that incorporates participation in regional transportation planning.
- Updating agency policy and guidance to ensure that all Environmental Impact Statements and Environmental Assessments required under NEPA for proposed new or expanded Federal facilities identify and analyze impacts associated with energy usage and alternative energy sources.
- Updating agency policy and guidance to ensure coordination and (where appropriate) consultation with Federal, State, Tribal and local management authorities during the NEPA process.

DOT has developed a strategic approach that includes short-, medium-, and long-term initiatives to accomplish these goals.

**5.1. Short-Term Initiatives*****5.1.1. Policy and Guidance***

- Provide support to State and regional agencies by providing guidance and technical support, review and input of State transportation climate action plans, and sponsorship of peer exchanges to assist agencies in developing effective planning practices under existing regulations.
- Provide leadership support to promote climate adaptation strategy and the incorporation of climate change considerations in planning and investment decisions.
- Provide guidance and support to local and regional governments in promoting worksite trip reduction.
- Conduct a series of facilitated workshops to develop and implement strategies and outline long-term initiatives to achieve these goals.

***5.1.2. Planning and Design***

- Research and deploy information technologies to support system efficiency and maximize operational and travel behavior strategies.
- Engage States and MPOs to develop best practices for incorporating climate change and adaptation strategies into their planning processes.
- Assess public transportation in future site locations of administrative offices.
- Incentivize employees to pursue alternative work arrangements and commuting methods besides single occupancy vehicles by strategically locating facilities to reduce negative transportation impacts.
- Integrate employee commuting policy and initiatives under this goal with Goal 2 'Scope 3 Greenhouse Gas Emissions Reduction'.

***5.1.3. Training and Awareness***

- Develop training on 'eco-driving' strategies to teach efficient driving and vehicle maintenance practices to reduce emissions.
- Train Real Property managers and staff on the principles of regional and local planning associated with the goals of EO 13514.

## 5.2. Medium-Term Initiatives

### 5.2.1. Policy and Guidance

- Develop and implement 'live where you work' programs, to encourage use of telework centers and employees to live in communities and neighborhoods near DOT facilities.
- Examine the potential for offering incentives for employees to move into surrounding communities enabling walk and transit commutes.
- Provide secure indoor storage for bicycles, and proper facilities to support commuting via bicycle, where needed, feasible, and cost-effective.
- Enhance Transportation and Climate Change Clearinghouse (TCCC) website and update content.
- Initiate actions to implement national adaptation strategy.
- Assist communities with new potential DOT facilities to achieve LEED for Neighborhood Development (ND) certification.

## 5.3. Long-Term Initiatives

### 5.3.1. Planning and Design:

- Locate future DOT facilities near transit stops in more urban areas of America's low Vehicle Miles Traveled (VMT) cities where possible and achieving this objective will not inhibit DOT's mission.
- Ensure that DOT facilities are an integrated part of the community, where possible and achieving this objective will not inhibit DOT's mission.
- Establish set of sustainability siting metrics for new DOT sites: (e.g. connectivity/concentration of intersections, proximity to bicycle network, distance from transit stations, etc.).

### d. Positions –

- Recruit staff with the knowledge, skills and capabilities to work with local and regional groups and to address employee related transportation issues.

**e. Planning table –**  
Regional and Local Planning goals.

REGIONAL AND LOCAL PLANNING	Units	FY 10	FY 11	FY 12	FY 13	....	FY 20
Other, as defined by agency	?						
Leveraged Investment (funded through annually recurring existing budget items, such as capital improvement, O&M, etc. or ARRA)	\$ M	?	?	?			
Incremental Investment (funded through new program budget requests specific to this EO)	\$ M	?	?	?			
Alternative Investment (funded through ESPC, UESC, EUL, PPA, rebates, or other funding assistance)	\$ M	?	?	?			

**f. Department status –**

DOT has a telework policy and program in place. DOT has designated telework coordinators who work with the Office of Personnel Management to implement DOT’s telework program. This program provides policy, guidance, leadership, planning, and consulting services for telecommuting in DOT. DOT offers online telework training for managers and employees and a mandatory IT security training for all teleworkers. In addition, DOT offers other resources for performance management, including guidance documents, websites and a work plan structure agreement that provides a framework for the required discussion for managers and employees about expectations.

As part of its regional consolidation efforts, DOT is examining employee commuting and developing strategies to increase alternatives to conventional vehicle single occupancy commutes. DOT has a viable survey tool to assess employee commuting and receptivity to alternative lower environmental impact commute choices. The “Commuter Choice” survey has been recognized by CEQ and OMB as a method to track commuting GHG and gain insight on what alternative commuting programs may be embraced by employees.

DOT formed a bicycle commuter group in 2007 for commuters who bike or walk to DOT HQ. The group meets monthly to discuss topics of interest and to develop methods which encourage and promote wider participation in bicycling and walking as modes of transportation. The group shares information about commutes with cyclists and other interested parties and is working to improve bicycle facilities for people who work at DOT HQ. On May 24, 2010 Assistant Secretary for Administration Linda Washington signed a new transit benefit policy for bicyclists. The policy is the first of its kind, and grants up to \$20 per month for bicycle maintenance to DOT employees who bike to work. The goal is to encourage employees to choose transportation methods that improve air quality and personal health.

DOT has founded the Transportation and Climate Change Clearinghouse (TCCC) to be the focal point of technical expertise on transportation and climate change. Through strategic research, policy analysis, partnerships, and outreach, the Center creates comprehensive and multi-modal approaches to reduce transportation-related greenhouse gases and to mitigate the effects of global climate change on the

transportation network. The Center researches transportation strategies and technologies to reduce greenhouse gases, identifies facilities that may be at risk from possible effects of climate change and climate anomalies, and develops an array of tools to assess the transportation system's ability to adapt to variances in global climate.

## 6. GOAL 6: Improve Water Use Efficiency and Management

The Department of Transportation (DOT) is committed to reducing potable water use intensity, industrial, landscaping, and agricultural water use, identifying and implementing water reuse strategies and achieving objectives established by EPA in Stormwater Guidance for Federal Facilities. The requirements for water use efficiency will be achieved through the HPSB program (Goal 4) along with additional initiatives specifically targeting best value water efficiency opportunities. Water efficiency goals require establishing new initiatives, tools, and policies, along with developing awareness and training. The following is an overview of the goals and short, medium, and long-term initiatives that will achieve the EO goals. The HPSB goals will be integrated with other EO goals (e.g., Sustainable Building requirements) to achieve greater overall achievement and efficiency of EO implementation. These strategies will be further refined in future annual updates of this Plan.

### **a. Goal description –**

To fulfill the requirements of EOs 13423 and 13514, DOT will plan and take action working across the OAs to:

- Reduce potable water use intensity by at least 26 percent by FY 2020
- Reduce industrial, landscaping, and agricultural water use by at least 20% by FY 2020.
- Identify and implement water reuse strategies in coordination with high performance sustainable buildings initiatives.
- Achieve objectives established by EPA in Stormwater Guidance for Federal Facilities.

### **b. Department lead for goal –**

The head of the Real Property Council, as the designated Department lead, will direct the activities of the real property and facility managers for target development, implementation and oversight.

### **c. Implementation methods –**

DOT will implement the goals listed above by using the following approaches: deploy new building designs and upgrade existing buildings to improve water efficiency, and drive water conservation initiatives, water efficient landscaping and irrigation design and policies, and water reuse and recycling initiatives. DOT will implement design and construction strategies to reduce storm water runoff and polluted site water runoff.

DOT has developed a strategic approach that includes short-, medium-, and long-term initiatives to accomplish these goals.

## 6.1. Short-Term Initiatives

### 6.1.1. Policy and Guidance

- Develop a policy and strategy for management and efficient use of water.
- Form a community of subject matter experts across DOT operating administrations to develop policies and guidance.

### 6.1.2. Planning and Design

- Identify data limitations and methods to improve water consumption data.

- Identify a baseline through water audits at DOT sites to determine opportunities for water conservation.
- Conduct best in class study of DOT and Federal Agencies for water use.
- Employ strategies that reduce potable water use by 20 percent.
- Establish baselines for buildings, after meeting the EPA Act 1992, Uniform Plumbing Codes 2006, and the International Plumbing Codes 2006 fixture performance requirements.
- Begin establishing dedicated metering for supply versus sewerage to the extent practicable.

#### *6.1.3. Training and Awareness*

- Develop communication strategy focused on water use and conservation.
- Develop a training program for water conservation policy, techniques, design, and best available water-efficient technologies to ensure that appropriate agency program and technical personnel are knowledgeable on the water use efficiency and management goals in EO 13514.
- Communicate goals to senior management on water use efficiency and recommend opportunities for improvement.
- Develop a process to solicit water conservation ideas from employees on a regular basis.

## **6.2. Medium-Term Initiatives**

#### *6.2.1. Policy and Guidance*

- Initiate the development of a water use information system by adding new fields and requirement to provide consumption information from invoices in the Delphi financial database. Develop new business rules and enter new information.
- Develop strategies for the different operational areas to attain DOT-wide goals.
- Develop a consistent set of metrics to measure water consumption across the organization.

#### *6.2.2. Planning and Design*

- Include alternative ways (e.g., alternative technologies) to make use of rain water, treated wastewater, and air conditioner condensate.
- Conduct benchmarking of best-in-class practices utilized by other federal agencies and the private sector.
- Pursue strategies to reduce water consumption in DOT facility cooling towers.
- Employ design and construction strategies that reduce storm water runoff and discharges of polluted water offsite.
- Establish green roofing design and policy for new building designs.

#### *6.2.3. Training and Awareness*

- Develop training modules in eLMS for engineers in the field and other DOT employees on water conservation policy, technologies and best practices.

#### *6.2.4. Operations & Maintenance:*

- Install meters at the highest water consumption facilities to capture actual water consumption which allows for the management of water use during occupancy. Include separation of water supply and sewerage so that facilities can save money



for water that reused on site (e.g. graywater) and also not be charged for water that evaporates (i.e. lost from cooling tower or landscaping).

- Institute water efficient landscape and irrigation policy and strategies, such as beneficial landscaping, xeriscaping, water reuse, recycling, and harvested rainwater use to reduce outdoor potable water consumption.

### **6.3. Long-Term Initiatives**

#### *6.3.1. Policy and Guidance:*

- Develop a template that can be used in SOW for renovations or new construction that incorporates all HPSB Guiding Principles. The template would include all water conservation requirements.

#### *6.3.2. Planning and Design:*

- Conduct a series of facilitated workshops develop and implement strategies and outline long-term initiatives to achieve these goals.

#### *6.3.3. Training and Awareness*

- Develop a center of excellence (part of Goal 4, Sustainable Buildings strategy) for subject matter experts that can address water issues, along with other facility sustainability objectives, across DOT.
- Continue to implement change management process including awareness to ensure HPSB goals are met.
- Communicate goals to senior management on water consumption and recommend opportunities for improvement.
- Institute process to solicit ideas for innovative methods and ideas for water conservation from employees.

#### *6.3.4. Operations and Maintenance:*

- Choose irrigation contractors who are certified through a WaterSense labeled program.
- Specify EPA's WaterSense-labeled products or other water conserving products in contracts, where available.
- Conduct a business case analysis for reuse of gray water.
- Identify products and practices that make low flow and no water plumbing fixtures effective and acceptable to employees.

#### *6.3.5. Facility Tracking and Reporting*

- Develop a data system to capture water consumption in facilities
- Develop a dashboard that communicates water consumption by OAs and DOT-wide.

#### **d. Positions**

- Develop/hire employees with skills in water management and conservation.
- Allocate resources for capturing water consumption data through metering and new fields in the Delphi System
- Allocate funding for developing training and awareness programs
- Allocate resources for technical training and employee awareness training programs

**e. Planning table –**  
Water conservation goals.

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)	%	6%	8%	10%	12%	14%	16%	....	26%
Planned Potable Water Reduction (gal/SF reduced from FY07 base year)	%	6%	8%	10%	12%	14%	16%	....	26%
Industrial, Landscaping, and Agricultural Water Reduction Targets (gal reduced from FY10 base year)	%	-	2%	4%	6%	8%	10%	....	20%
Planned Industrial, Landscaping, and Agricultural Water Reduction (gal reduced from FY10 base year)	%	-	2%	4%	6%	8%	10%	....	20%
Other, as defined by agency	?								
Leveraged Investment (funded through annually recurring existing budget items, such as capital improvement, O&M, etc. or ARRA)	\$ M	?	?	?					
Incremental Investment (funded through new program budget requests specific to this EO)	\$ M	?	?	?					
Alternative Investment (funded through ESPC, UESC, EUL, PPA, rebates, or other funding assistance)	\$ M	?	?	?					

**f. Department status –**

DOT has a High Performance and Sustainable Buildings Implementation Plan (SBIP), which provides DOT policy for achieving the high performance/sustainable buildings goals for 1) the design, construction, and maintenance and operation practices of all new facilities and major renovation projects; and 2) the maintenance and operation practices of existing facilities. There are five Guiding Principles of which one is to protect and conserve water.

DOT has employed several new water conservation measures within its facilities. For example; new project submittals are being reviewed to ensure the use of low-flow water fixtures with a rating of 1 gallon per minute (gpm) for water faucets and 1.5 gpm for shower heads; low consumption flush valves with a rating of one gallon per flush are being used on many new installations and replacements; smart landscape designs are being reviewed to evaluate and improve irrigation systems by repairing and replacing sprinkler heads; retrofitting micro-irrigation systems, and installing moisture sensors. Additionally, DOT is identifying areas for smart landscape, replacing grass with indigenous drought tolerant plants, water harvesting, and installing a centrally-based irrigation control system.

Obtaining reliable water consumption data has been a challenge. This strategy addresses that deficiency.

## 7. GOAL 7: Pollution Prevention

The Department of Transportation (DOT) is committed to complying with the requirements of EOs 13423 and 13514 and the Pollution Prevention Act of 1990 (PPA), which describes Congress' preferred hierarchy for reduction and management of wastes. DOT has pursued pollution prevention and waste minimization activities through Green Procurement, Electronic Stewardship and High Performance Sustainable Buildings programs.

DOT developed a Green Procurement Plan (GPP) (see Appendix 3) to enhance and sustain the DOT mission through cost effective acquisition that achieves compliance, reduces resource consumption and solid and hazardous waste generation. One of the objectives of this Plan is to emphasize pollution prevention as part of the purchasing process and it applies to all acquisitions and contracting mechanisms, including service contracts, leases, purchases made with government purchase and fleet cards and purchases below the micro-purchase threshold.

### **a. Goal description –**

To fulfill the requirements of EOs 13423 and 13514, DOT will plan and take action working across the OAs to:

- Increase source reduction of pollutants and waste.
- Divert at least 50 percent non-hazardous solid waste by FY 2015. Divert at least 50% construction and demolition materials and debris by FY 2015.
- Reduce printing paper use.
- Increase proportion of uncoated printing and writing paper containing at least 30 percent postconsumer fiber, while aiming to decrease paper usage department-wide.
- Reduce and minimize the acquisition, use, and disposal of hazardous chemicals and materials.
- Increase diversion of compostable and organic materials from the waste stream.
- Implement integrated pest management and landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals and materials.
- Increase agency use of acceptable alternative chemicals and processes.
- Decrease agency use of chemicals to assist the Department in achieving FY 2020 GHG reduction targets [See Section II – Goals 1 and 2].
- Report in accordance with Sections (301-313) of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986.

### **b. Department lead for goal –**

The Senior Sustainability Officer (SSO), as the designated Department lead, will direct the activities through the Higher Tier Environmental Management System (EMS) for target development, implementation and oversight.

### **c. Implementation methods –**

DOT will implement the goals listed above by addressing two main categories: solid waste management and pollution prevention. Several of the pollution prevention goals are directly linked to Sustainable Acquisition activities, which are discussed under Goal No. 8.

#### *Solid Waste Management:*

“Solid waste” consists of municipal solid waste (MSW), including landscape waste and food waste, discarded electronic items (e-waste), and construction debris.

Universal waste items (e.g., lead-acid batteries, fluorescent lamps), special non-hazardous wastes (e.g., scrubber and wastewater treatment sludge), or hazardous wastes are not included in this definition.

- Divert at least 50 percent of non-hazardous solid waste by the end of fiscal year 2015.
- Minimize the generation of waste and pollutants through source reduction
- Increase the diversion of compostable and organic material from the waste stream.

*Pollution Prevention:*

Pollution Prevention (P2) strategies generally consist of one of the following actions: equipment or technology modifications; process or procedure modifications; reformulation or redesign of products; substitution of raw materials; and/or improvements in housekeeping, maintenance, training, or inventory controls.

- Decrease agency use of chemicals to assist the agency in achieving greenhouse gas reduction targets.
- Reduce printing paper use and acquiring uncoated printing and writing paper containing at least 30 percent post-consumer fiber.

DOT has developed a strategic approach that includes short-, medium-, and long-term initiatives to accomplish these goals.

## **7.1. Short-Term Initiatives**

### *7.1.1. Policy and Guidance*

- Issue procurement policies, regulations, contract clauses and grant provisions in consonance with green procurement requirements.
- Utilize statements of work or specifications to eliminate virgin material requirements, promote the reuse of products, require the use of alternative fuels and alternative fueled vehicles, products containing recovered materials (e.g. EPA-designated products), products that are Energy Star® and FEMP designated or energy-efficient, water conserving WaterSense® labeled products, bio-based products, Environmentally Preferable Products, EPEAT registered products, and non-ozone depleting products.
- Execute long-term contracts with waste collection contractors to ensure best possible revenue from sale of recyclable materials (or alternatively place the majority of market-related risks with the contractor).
- Research an initiative to require that construction and demolition contractors develop a project waste management plan, and place recycling container(s) on site for duration of the project.
- Grow office waste recycling programs that include not only high-grade paper and corrugated cardboard but other items including beverage containers, compostable cafeteria wastes, newspapers, dry cell batteries, toner cartridges, used furniture, and e-waste (e-waste management is discussed under Goal 9, Electronic Stewardship).
- Standardize the waste measurement metrics and waste streams.

### *7.1.2. Planning and Design*

- Conduct a series of facilitated workshops to develop long-term initiatives to achieve these goals.

- Provide guidance, facilitate acquisition planning and establish Federal supply sources, such as the General Services Administration (GSA), Government Printing Office (GPO), Javits-Wagner-O' Day (JWOD) Program, the Defense General Supply Center (DGSC), and UNICOR for EPA-designated items and other recycled content products.
- Baseline concurrence with green procurement policy and requirements.
- Develop a DOT-wide P2 and Waste Management Strategic Plan focusing on source reduction, recycling, and (where absolutely necessary) disposal or diversion.
- Establish a pilot program for collecting and composting wastes.

#### *7.1.3. Training and Awareness*

- Implement an awareness program to promote the GPP, and distribute information on best practices through awareness and outreach programs to promote acquisition of environmentally preferable products, services and new technologies.
- Promote the DOT GPP through articles in newsletters, workshops to educate employees, and using logos/recycling statements on official stationary and publications directed to reach field operations, procurement officials, supply and requirements personnel and individuals who purchase material or products with a government credit card.
- Establish web sites for Department policies and information on waste management and pollution prevention.
- Develop module in eLMS and conduct training for procurement personnel at least annually.
- Facilitate and coordinate educational and promotional programs for employees and contractors, as appropriate.
- Conduct market research necessary to determine the availability of environmentally preferable good and services.
- Provide vendor and product information from established Federal supply sources and outside vendors to program and procurement offices through: electronic media such as DOT's procurement office web site and other appropriate systems, and internal documents and publications, newsletters, and at appropriate conferences, workshops, and meetings.
- Establish an incentive program to encourage waste minimization and P2 ideas from employees.
- Discourage production of hard copy memos and reports to reduce waste; promote paperless office practices.

#### *7.1.4. Facility Tracking and Reporting*

- Identify green procurement data for compilation and distribution to key stakeholders.
- Report the status of the GPP within the Department to senior management and externally to other applicable Federal agencies and offices.
- Conduct self assessments by OAs to continually improve green procurement process and better describe environmental and other green requirements in statements of work and contracts.
- Conduct P2 and waste audits at priority facilities identified by DOT, including assessment of waste generation and disposal; waste streams; waste stream composition; source reduction opportunities; effectiveness of current recycling programs; and implemented waste diversion technologies.
- Develop key metrics and create a system for tracking performance.

- Quantify amount of office paper reduction by OA to increase accountability. Compare the quantities purchased during a baseline period (i.e., before implementation of the double-sided copying/printing policy) and a post-implementation period to monitor changes in consumption of paper from double sided printing.

#### *7.1.5. Solid Waste Management:*

- Use 'just-in-time' methods to reduce excessive construction-related debris.
- Ensure that demolition is performed in a manner that allows debris to be readily recycled (e.g., wrecking ball rather than explosives, shear attachments to separate scrap metal from other debris).
- Use crushed brick and concrete rubble from demolition as fill material on the project site, where possible.
- Where permissible, and cost-effective, decontaminate debris on site rather than directly dispose of it at off-site facilities.
- Where feasible, use a three-bin collection system at the point of generation, to ensure organics are not mixed with other MSW.
- For facilities that generate small amounts of waste, evaluate benefits, limitations, and costs of on-site composting; if composting on site, take all necessary steps to control odor or rodents.
- Minimize use of toxic or hazardous solvents and cleanup chemicals in laboratory operations, where feasible.
- Procure recyclable and reusable items over disposable versions (e.g. recyclable binder covers; rechargeable batteries).

#### *7.1.5. Pollution Prevention:*

- Make DOT a paperless agency; evaluate business processes to identify those that may be made paperless, through electronic means (e.g., scanning, and appropriate tools to read scanned documents, faxing, and electronic versions of all standard forms).
- Explore opportunities to eliminate use of paper towels in DOT bathrooms.
- Calculate cost savings from going paperless; and reinvest savings into P2 programs.
- Recycle mixed office paper, which includes nearly all waste paper generated in an office, such as white paper (copier, printer, and notepaper), colored paper, file folders, and envelopes.
- Encourage sensible practices for office paper usage, such as (a) reviewing documents on-line, rather than printing; (b) providing information electronically instead of through paper; and (c) distributing paper documents through routing rather than through duplication.
- Set double-sided copying or printing as the default mode for all copiers and printers DOT-wide.
- Reduce recordable media waste, such as CD-ROMs, by providing secure flash drives and remote access to agency data storage.
- Purchase digital magazine subscriptions and route them via e-mail.
- Use traps and physical barriers to prevent contact between pests and plantings.
- Leave mowed grass clippings on lawn areas (provided odor is not objectionable) and use recycled wood chips or compost for mulch.
- Compost all yard waste on site if possible.
- Evaluate potential use of organic and non-toxic soil amendments and/or pesticides.

- Use natural vegetation and xeriscaping rather than turf grass and non-native trees or shrubs, where appropriate.
- Use standard available products without Ozone Depleting Substances to refill existing chillers and refrigeration units.
- Convert existing units to non-CFC and non-HCFC where practicable.
- Prevent fugitive emissions and manage CFCs purged from older units in accordance with Clean Air Act requirements.
- Require that all vendors reduce the amount of packaging waste, including substitution of reusable shipping containers for disposable packaging.
- Ensure that P2 and waste minimization programs are consistent with DOT-wide and lower-tier EMS's.
- Explore synergies between this Goal and the High Performance Sustainable Buildings, Sustainable Acquisitions and Electronics Stewardship Goals, to maximize P2 and source reduction efforts.

## 7.2. Medium-Term Initiatives

### 7.2.1. Planning and Design:

- Implement a Hazardous Material Management policy for the Department and its Operating Administrations to reduce the quantities of hazardous materials purchased, used, and disposed.
- Promote the procurement and use of products with low levels of volatile organic compounds (VOCs) or non-toxic chemicals.
- Seek out innovative technologies for water, energy, and waste reduction.
- Develop a Department-wide financial strategy for contracting end of life recycling of e-waste.

### 7.2.2. Training and Awareness:

- Conduct targeted analysis of use of green procurement practices and update training module in eLMS.
- Establish a green procurement training module in eLMS for the purchasing community.
- Consider starting campus clean up days/week at all DOT facilities to increase waste reduction awareness.

### 7.2.3. Facility Tracking and Reporting:

- Audit facilities and field operations on a periodic basis to assure compliance with green procurement policies and practices.
- Gather data and conduct retroactive audits to determine which existing programs should be continued, and then fine-tune remaining programs to maximize waste reduction and cost-effectiveness.

### 7.2.4. Solid Waste Management:

- Implement organics composting contracts where technically feasible and cost-effective.
- Determine a baseline for the amount of food waste generated at every DOT facility.

### 7.2.5. Pollution Prevention:

- Perform life-cycle assessments (LCAs) of materials or products that DOT uses in large quantities.

### 7.3. Long-Term Initiatives

#### 7.3.1. *Planning and Design:*

- Establish a DOT-wide contract for replacement of ink jet and toner cartridges that includes mandatory use of remanufactured ink jet and toner cartridges, easy recycling of spent ink jet and toner cartridges, and credit for recycled ink jet and toner cartridges.
- Encourage carbon footprint minimization through the supply chain by including contract provisions with suppliers of all materials, goods, and services to identify and use more energy-efficient products.

#### 7.3.2. *Solid Waste Management:*

- Ensure that all DOT facilities are CFC- and HCFC-free.
- Evaluate alternatives to expand P2 and source reduction such that the EO 13514 targets are significantly exceeded and that DOT is positioned to comply with any future, more stringent statutes, regulations, and/or EOs.
- Continue to engage with vendors and contractors to reduce upstream impacts in the supply chain, e.g., carbon emissions, air pollutants, wastewater, solid wastes, etc.
- Implement cost-effective, innovative P2 technologies.
- Identify and evaluate ways to use operations and purchasing, where possible, to contribute to chemical security by promoting a transition to the purchasing and use of safer chemicals.

#### 7.3.3. *Pollution Prevention:*

- Implement steps to reduce overall air, water, waste, carbon, and other impacts from the supply chain, consistent with LCAs.
- Continue to engage with vendors and contractors to reduce upstream impacts in the supply chain, e.g., carbon emissions, air pollutants, wastewater, solid wastes, etc.

#### **d. Positions –**

- Hire subject matter experts in the areas of pollution prevention, waste management, and green procurement.



**e. Planning table –**

Pollution prevention and waste elimination goals.

POLLUTION PREVENTION & WASTE ELIMINATION	Units	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Non-Hazardous Solid Waste Diversion Targets (non C&D)	%	-	5%	10%	15%	20%	50%
C&D Material & Debris Diversion Targets	%	-	5%	10%	15%	20%	50%
Other, as defined by agency	?						
Leveraged Investment (funded through annually recurring existing budget items, such as capital improvement, O&M, etc. or ARRA)	\$ M	?	?	?			
Incremental Investment (funded through new program budget requests specific to this EO)	\$ M	?	?	?			
Alternative Investment (funded through ESPC, UESC, EUL, PPA, rebates, or other funding assistance)	\$ M	?	?	?			

**f. Department status –**

DOT developed a Green Procurement Plan (GPP) to enhance and sustain the DOT mission through cost effective acquisition that achieves compliance and reduces resource consumption and solid and hazardous waste generation. DOT’s procurement of green products and services contributes to sound management of the Department’s financial resources, natural resources, and energy. In its day-to-day operations, DOT is committed to be environmentally and energy conscious in its selection and use of products and services. The GPP demonstrates DOT’s commitment to environmental stewardship by becoming a model consumer of green products and services.

DOT has implemented a Green Procurement Compliance System to ensure the GPP is being implemented. The Green Procurement Compliance System was initiated to 1) determine if the goals of the GPP are being implemented and progress made; and 2) provide a mechanism to provide continual improvement in contracting and using environmentally friendly materials and services.

Best practices for sustainable acquisition will be formally shared among the Operating Administrations of the Department. For example, the Maritime Administration has a model Green Procurement Program. Key points of this initiative include acquisition of low sulfur marine fuel, alternative fuels, alternative-fueled vehicles, bio-based products, Energy Star® and energy efficient products, environmentally preferable products, non-ozone depleting substances for air conditioning, recovered material, renewable energy, and water efficient products. Limiting acquisitions and procurement to contractors (such as shipyards) that meet specified environmental standards is being evaluated.

DOT has established an annual awards program to recognize successful and innovative waste prevention, recycling, and affirmative procurement programs throughout the Department. The program is administered by DOT’s Office of the Secretary, Office of Real and Personal Property and Asset Management as part of the environmental policy program. Award winners are eligible to compete in the White House Closing the Circle

Awards Program (renamed to GreenGov award) and other applicable public and private awards programs.

## 8. GOAL 8: Sustainable Acquisition

The Department of Transportation (DOT) has developed a Green Procurement Plan (GPP) (see Appendix 3) to enhance and sustain the DOT mission through cost effective acquisition that achieves compliance, reduces resource consumption and solid and hazardous waste generation. Green procurement is the purchase of environmentally preferable products and services in accordance with the established Federal “green” procurement preference programs. The GPP applies to all acquisitions and contracting mechanisms used by Federal agencies, including service contracts, leases, purchases made with government purchase and fleet cards and purchases below the micro-purchase threshold.

### **a. Goal description –**

To fulfill the requirements of EOs 13423 and 13514, and other pertinent requirements, DOT will plan and take action working across the OAs to:

- Ensure 95 percent 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 policies and programs to ensure that all Federally-mandated designated products and services are included in all relevant acquisitions.

### **b. Department lead for goal –**

The Senior Procurement Officer, as the designated Department lead, will direct the activities of the Higher-Tier Environmental Management System (EMS) for target development, implementation and oversight.

### **c. Implementation methods –**

DOT will implement the goals listed above by ensuring that 95 percent 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, water efficient, biobased, environmentally preferable, non-ozone depleting, contain recycled content, or are non-toxic or less toxic alternatives, and by updating agency affirmative procurement plans, policies and programs to include all Federally-mandated designated products and services in all relevant acquisitions.

DOT has developed, and will continue to refine, a strategic approach that includes short-, medium-, and long-term initiatives to accomplish these goals.

## 8.1. Short-Term Initiatives

### *8.1.1. Policy and Guidance*

- Facilitate environmental programs in the areas of acquisitions, facilities management, standards, waste prevention, recycling, and logistics activities as they relate to GPP.
- Review new contract actions to verify that green products and services are being required when appropriate.

- Issue procurement policies, regulations, contract clauses and grant provisions in consonance with green procurement requirements.
- Utilize statements of work or specifications to eliminate virgin material requirements, promote the reuse of products, require the use of alternative fuels and alternative fueled vehicles, products containing recovered materials (e.g. EPA-designated products), products that are Energy Star® and FEMP designated or energy-efficient, water conserving WaterSense® labeled products, bio-based products, Environmentally Preferable Products, EPEAT registered products, and non-ozone depleting products.

#### *8.1.2. Planning and Design*

- Provide guidance and facilitate acquisition planning and establish Federal supply sources, such as the General Services Administration (GSA), Government Printing Office (GPO), Javits-Wagner-O' Day (JWOD) Program, the Defense General Supply Center (DGSC), and UNICOR for EPA-designated items and other recycled content products.
- Baseline concurrence with green procurement policy and requirements.

#### *8.1.3. Training and Awareness*

- Distribute information on best practices through awareness and outreach programs to facilitate markets for environmentally preferable products, services and new technologies.
- Create a module in eLMS and conduct green purchasing training for procurement personnel (e.g., live, web-based, via training slides) at least annually.
- Facilitate and coordinate educational and promotional programs for employees (the purchasing community) and contractors, as appropriate.
- Implement an awareness program to promote the GPP.
- Conduct market research to determine the availability of environmentally preferable good and services.
- Provide vendor and product information from established Federal supply sources and outside vendors to program and procurement offices through: electronic media such as DOT's procurement office web site and other appropriate systems; and internal documents and publications; newsletters; and at appropriate conferences, workshops, and meetings.
- Promote the DOT GPP through articles in newsletters, workshops to educate employees, and using logos/recycling statements on official stationary and publications directed to reach field operations, procurement officials, supply and requirements personnel and individuals who purchase material or products with a government credit card.

#### *8.1.4. Facility Tracking and Reporting*

- Identify green procurement data for compilation and distribution to key stakeholders.
- Report the status of the GPP within the Department to Senior Management and externally to other applicable Federal agencies and offices.
- Conduct self assessments by OAs to continually improve green procurement process and better describe environmental and other green requirements in statements of work and contracts.
- Develop key metrics and create a system for tracking performance.

- Monitor DOT contracts for requirements of Certificate program such as 52.223-1 and Biobased Product Certification 52.223-7, Recovered Material Certification Content for EPA designated Products.
- Ensure that FAR 52.204, Printed or Copied on Double Sided or Recycled Paper and 52.223-6, Drug Free Workplace is in all DOT contracts.

## 8.2. Medium-Term Initiatives

### 8.2.1. Planning and Design:

- Implement a Hazardous Material Management program to reduce the quantities of hazardous materials purchased, used, and disposed.
- Promote the procurement and use of products with low levels of volatile organic compounds (VOCs) or non-toxic chemicals.
- Develop acquisition plan requirement for each OA which incorporates the applicable sustainability goals herein and the goals identified in the DOT Green Purchasing Plan (See Appendix 3).

### 8.2.2. Training and Awareness:

- Conduct targeted analysis of use of green procurement practices and update training module in eLMS.
- Develop intranet website for sustainable acquisition frequently asked questions.

### 8.2.3. Facility Tracking and Reporting:

- Audit facilities and field operations on a periodic basis to assure compliance with green procurement policies and practices.
- Perform life-cycle assessments (LCAs) of materials or products that DOT uses in large quantities.
- Establish metrics for progress such as total dollars of procured green products vs. conventional.
- Identify potential specific product labeling system for Environmental Preferred Products (e.g. GreenSeal, EcoLogo, FSC wood/paper products, etc.)

## 8.3. Long-Term Initiatives

### 8.3.1. Planning and Design:

- Conduct a series of facilitated workshops to develop long-term initiatives to achieve these goals.
- Establish a DOT-wide contract for replacement of ink jet and toner cartridges that includes mandatory use of remanufactured ink jet and toner cartridges, easy recycling of spent ink jet and toner cartridges, and credit for recycled ink jet and toner cartridges.
- Encourage carbon footprint minimization through the supply chain by including contract provisions with suppliers of all materials, goods, and services to identify and use more energy-efficient products.

### d. Positions –

- Hire subject matter experts in green procurement.

**e. Planning table –**  
Sustainable Acquisition goals.

SUSTAINABLE ACQUISITION	Units	FY 10	FY 11	FY 12	....	FY 20
New Contract Actions Meeting Sustainable Acquisition Requirements	%	95	95	hold	hold	hold
Energy Efficient Products (Energy Star® , FEMP-designated, and low standby power devices)	%	95	95	95	95	95
Water Efficient Products	%	?	?	?	?	?
Biobased Products	%	?	?	?	?	?
Recycled Content Products	%	?	?	?	?	?
Environmentally Preferable Products/Services (excluding EPEAT)	%	95	95	95	95	95
SNAP/non-ozone depleting substances	%	?	?	?	?	?
Other, as defined by agency	?					
Leveraged Investment (funded through annually recurring existing budget items, such as capital improvement, O&M, etc. or ARRA)	\$ M	?	?	?		
Incremental Investment (funded through new program budget requests specific to this EO)	\$ M	?	?	?		
Alternative Investment (funded through ESPC, UESC, EUL, PPA, rebates, or other funding assistance)	\$ M	?	?	?		

**f. Department status –**

DOT developed a Green Procurement Plan (GPP) to enhance and sustain the DOT mission through cost effective acquisition that achieves compliance and reduces resource consumption and solid and hazardous waste generation. DOT’s procurement of green products and services contributes to sound management of the Department’s financial resources, natural resources, and energy. In its day-to-day operations, DOT is committed to be environmentally and energy conscious in its selection and use of products and services. The GPP demonstrates DOT’s commitment to environmental stewardship by becoming a model consumer of green products and services.

DOT has implemented a Green Procurement Compliance System to ensure the GPP is being implemented. The Green Procurement Compliance System was initiated to 1) determine if the goals established in the GPP are being implemented and progress made; and 2) provide a mechanism to provide continual improvement in contracting and using environmentally friendly materials and services.

The Maritime Administration instituted a Green Procurement Program for Acquisition and Procurement. Key points of this initiative include acquisition of low sulfur marine fuel, alternative fuels, alternative-fueled vehicles, bio-based products, Energy Star® and energy efficient products, environmentally preferable products, non-ozone depleting substances for air conditioning, recovered material, renewable energy, and water efficient products. Limiting acquisitions and procurement to contractors (such as shipyards) which meet specified environmental standards is being evaluated.

DOT has established an annual awards program to recognize successful and innovative waste prevention, recycling, and affirmative procurement programs throughout the Department. The program is administered by DOT's Office of the Secretary, Office of Real and Personal Property and Asset Management as part of the environmental policy program. Award winners are eligible to compete in the White House Closing the Circle Awards Program (renamed to GreenGov award) and other applicable public and private awards programs.

## 9. GOAL 9: Electronic Stewardship and Data Centers

The Department of Transportation (DOT) is committed to the principles and practices of electronic stewardship and efficient data center management. Electronic stewardship addresses the life-cycle management of electronics from procurement to disposal for the purpose of reducing the environmental and energy impacts of electronic product acquisition, operation, maintenance and disposition. This goal also seeks to reduce the environmental and energy impacts of data centers. Executive Orders (EOs) 13423 and 13514 set goals, objectives and sustainable practices applicable to electronics stewardship and data center management.

### **a. Goal description –**

To fulfill the requirements of EOs 13423 and 13514, DOT will plan and take action working across the OAs to:

- 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 Department electronic products.
- Establish Department policy to reflect environmentally sound practices for disposition of all excess or surplus electronic products.
- Update policies to ensure implementation of best management practices for energy efficient management of servers and DOT data centers.
- Advance sustainable acquisition to ensure 95 percent of new contract actions including task and delivery orders, for products and services are energy-efficient (e. g., Energy Star®, Federal Energy Management Program (FEMP) Designated or Electronic Product Environmental Assessment Tool (EPEAT) registered).
- Comply with OMB Federal Data Center Consolidation data collection and planning activities deadlines to create DOT Data Center Consolidation Plan.
- Use OMB defined performance metrics to monitor the Department's progress in meeting technology energy consumption reduction goals in its data centers.
- Establish a process to increase and track the quantity of electronic assets disposed through sound disposal practices (reuse and recycled).

### **b. Department lead for goal –**

The Director of Information Technology and the Manager, Personal Property, as the designated Department leads, will direct the activities for policy, target development, implementation and oversight.

### **c. Implementation methods –**

DOT will implement the goals listed above by addressing the four life-cycle phases for electronics assets: Acquisition, Operations & Maintenance (O&M), Facility Tracking and Reporting and End-of-Life (disposition).

#### *Acquisition:*

- Ensure 95 percent of new contract actions for IT products and services are: energy efficient; water efficient; biobased content; environmentally preferable; non-ozone depleting; recycled content; non-toxic or less-toxic than alternatives.
- Ensure procurement preference for EPEAT-registered electronic products (Silver rated or higher (or standard equivalent)).

#### *Operations & Maintenance:*



- Implement and enforce power management, duplex printing, and other energy-efficient or environmentally preferable features on all electronic products through DOT policies.
- Implement best management practices in energy-efficient management of servers and DOT data centers (e.g., consolidation, server virtualization, cloud computing).
- Enable Energy Star® features on 100 percent of computers and monitors or to the maximum degree possible based on mission needs.
- Extend average lifespan of desktop computers to 4 years or better through policies and guidelines.
- Maintain average lifespan of servers to 4 years or better.

*Facility Tracking and Reporting:*

- Implement DOT-wide integrated reporting and tracking systems.
- Establish performance metrics for electronic stewardship activities and data centers.

*End of Life Management:*

- Implement environmentally sound management practices for recycling (eCycling) and final disposal of electronic wastes to help keep electronic components out of the landfill and recover materials for use in the manufacture of new products, including the following.
  - Donate or recycle used electronics to qualified organizations.
  - Dispose of usable or refurbished equipment through the General Services Administration and recycle unusable, unsold equipment using sustainable environmental practices.
  - Implement program to partner with electronics recyclers that adhere to strict environmentally sustainable practices.
  - Recycle end of life electronics and attempt to increase DOT reuse/recycle percentage.

DOT has developed Electronic Stewardship and Data Centers milestones that include short-, medium-, and long-term initiatives to accomplish these goals.

## **9.1. Short-Term Initiatives**

### *9.1.1. Policy and Guidance*

- Develop a green procurement policy to ensure EPEAT-registered electronic product procurement preference.
- Conduct a gap analysis of existing policies and programs that address electronic stewardship.
- Form a community of subject matter experts across DOT OAs to develop policies and guidance.
- Monitor Electronics Stewardship progress by establishing metrics via the Department's EMS communications and monitoring system and internal scorecard that evaluates EO and other Sustainability requirements and objectives across all 12 operating administrations and OST, twice annually.

### *9.1.2. Planning and Design*

- Study consolidation and virtualization of data centers and participate in government wide data center consolidation initiative to determine energy savings for data center cooling consumption and hardware cost savings and efficiency.

- Conduct an IT products and services needs assessment.
- Develop a list of all data center construction, expansion and/or consolidation activities currently planned or under way across all Departmental modes.
- Partner with OMB to develop DOT-wide data center consolidation plan.
- Establish data center baseline by conducting hardware and software (e.g., major systems and support) inventory to include energy usage and cost information.
- Develop guidance on the most effective methods of benchmarking current energy consumption/utilization.  
Conduct benchmarking study to identify current and best management.

#### *9.1.3. Training and Awareness*

- Develop aggressive awareness campaign to promote telework (see Goal 2, Scope 3 Greenhouse Gas Emissions Reduction) and to ensure employees (management employees specifically) are aware of the full range of support and resources available to them.
- Develop training for telework technologies.
- Develop, monitor and track training for DOT and contract personnel on applicable electronics stewardship requirements, related Federal Acquisition Regulations (FAR) and Transportation Acquisition Regulations (TAR) requirements.
- Develop training modules in eLMS relating to the energy-efficient operation of computers and monitors that will be customized to meet the needs of target audiences, with general modules for all DOT employees.
- Create awareness of DOT-wide double-sided copying and printing policy included in DOT Electronic Stewardship Plan.

#### *9.1.4. Acquisition:*

- Review internal Department procurement supply, program, logistics procedures, plans and directives and revise them as necessary to achieve the goals of EO 13514.
- Review and revise specifications, product descriptions, and standards during the acquisition planning stage to enhance DOT's procurement of EPEAT-registered products, Silver rated or higher (or equivalent). Develop IT Blanket Purchase Agreements (BPAs) that include EPEAT requirements; revise existing contracts and BPAs to include EPEAT compliance provisions.
- Work with vendors and manufacturers to enable Energy Star® features as part of the work order, where possible or appropriate.
- Require all vendors to initiate power management software on all computers for US Government Baseline Configuration (USGBC).
- Require that all new printers and/or copiers, both network and personal, provide duplex printing capability.
- Ensure procurement of Energy Star® and FEMP designated equipment.
- Procure EPEAT Silver-rated electronic products or higher if available.
- Purchase 95 percent or better of the DOT electronic computing equipment from EPEAT registered manufacturers that are Energy Star® 5.0 compliant.
- Continue four-year refresh policy, buying new EPEAT monitors, computers, and laptops, Silver rated or higher (or equivalent), when possible and applicable.
- Replace energy inefficient CRT monitors with LCD/LED flat screens whenever possible.
- Analyze cooling loads and type of servers that are purchased.

- Establish technical reference model for purchasing hardware and software.
- Research software products (e.g., productivity management software) to support telecommuting or reduced travel including: higher quality video conferencing technology.
- Ensure that FAR 52.204, Printed or Copied on Double Sided or Recycled Paper and 52.223-6, Drug Free Workplace is in all DOT contracts.

#### *9.1.5. Operations and Maintenance:*

- Establish Agency directive or guidance for power management; develop policies and guidelines and evaluate use of power management tools.
- Secure power management software with Wake-on-LAN capability.
- Enable Energy Star® power management features on computers, laptops and monitors.
- Implement Best Management Practices (BMP) to reduce energy consumption, including:
  - Efficient management of servers within data centers.
  - Set default on copiers to duplex printing.
  - Energy Star® power management features as default.
- Promote use of Electronic Product Environmental Assessment Tool that helps purchasers rank electronic products and other electronic products besides desktop computers, monitors and notebooks based on environmental attributes.
- Extend the useful life of electronics to a minimum of 4 years to the maximum degree possible based on mission needs.

#### *9.1.6. End of Life Management:*

- Develop policy to use environmentally sound disposal practices for excess or surplus electronic products.
- Study recycling of equipment and other products with vendors' exchange/take back programs.
- Recycle end of life electronics and attempt to increase DOT reuse/recycle percentage.

#### *9.1.7. Facility Tracking and Reporting*

- Plan to have software in 2010 that can check on the power settings for all Energy Star® monitors, computers, and laptops.
- Determine appropriate means to track and report Departmental progress in all four life cycle phases of electronic stewardship.
- Establish milestones for reaching electronic stewardship goals based on input from acquisition, property, and IT staff.

## **9.2. Medium-Term Initiatives**

### *9.2.1. Policy and Guidance*

- Define method to calculate the incremental costs for buying energy efficient equipment and associated cost savings.
- Assist DOT facilities to achieve Electronics Stewardship performance recognition via the Federal Electronics Challenge program.

### *9.2.2. Planning and Design*

- Conduct an analysis of the potential costs (considering life cycle costs) and benefits of investing in technology tools to support teleworkers.
- Conduct an analysis of the potential costs and environmental benefits of virtualization through the use of cloud computing.
- Establish best practices for data center floor space configuration, thermal and power management/equipment, and uses of alternative energy practices (e.g. outdoor air cooling, fly-wheel power back-up, etc.).

#### *9.2.3. Training and Awareness*

- Develop power management training and broadcast to all DOT employees and contractors about policy and power management commitment.
- Determine power management training requirements and develop any necessary training.

#### *9.2.4. Acquisition:*

- Assess and purchase software products (e.g., productivity management software) to support telework or reduce business travel.
- Establish (or integrate into existing) BPA for cell phones and TVs.
- Create a business process and business rules for acquiring Energy Star® computers, monitors and laptops BPA. This should include servers, UPSs, all of the other pieces of IT.
- Budget for IT tools, distance communications tools, video conferencing.
- Create programs to take back donated computers and monitors after recipients can no longer use them if those sites do not have access to recycling options.

#### *9.2.5. Operations & Maintenance:*

- Revise O&M policies to reflect the requirement of the EO 13514 and incorporate language to enable telework.
- Develop plan for DOT data center consolidation aligned to the OMB Federal Data Center Consolidation Initiative.
- Migrate to laptops to enable needs of mobile workforce and reduce power consumption to the maximum degree possible based on mission needs.
- Implement virtualization of the environment through cloud computing aligned with the OMB Federal Data Center Consolidation and Federal Cloud Computing Initiatives.

#### *9.2.6. End of Life Management:*

- Use vendors' exchange/take back programs.
- Require that purchasers of surplus electronics sign an agreement to show a 'chain of custody' for electronics that are refurbished and resold, and require that they have a "take back program.
- Develop standardized national recycling contract(s) for all DOT Operating Administrations.

#### *9.2.7. Facility Tracking and Reporting:*

- Strengthen the existing reporting system for tracking, reporting and communicating electronic property disposal actions.

### 9.3. Long-Term Initiatives

#### 9.3.1. *Planning and Design:*

- DOT will conduct a series of facilitated workshops to develop and implement strategies and outline long-term initiatives to achieve these goals.

#### 9.3.5. *Operations and Maintenance:*

- Consolidate selected data centers across DOT in order to achieve cost savings, energy consumption reductions, optimal space utilization and improvements in IT asset utilization. These data centers will be identified in the DOT Data Center Consolidation Plan developed in compliance with guidance provided by the OMB Federal Data Center Consolidation Initiative.

#### **d. Positions –**

- Hire subject matter experts to implement electronics stewardship requirements.
- Resource plan needs to be developed for needed software tools to support several of the EO requirements in the other goal areas.

**e. Planning table –**  
Electronic Stewardship and Data Centers goals.

ELECTRONIC STEWARDSHIP & DATA CENTERS	Units	FY 10	FY 11	FY 12	FY 13
% of device types covered by current Energy Star® specifications that must be energy-star qualified	%	95%	95%	95%	hold
% of electronic assets covered by sound disposition practices	%	95%	95%	95%	95%
% of cloud activity hosted in a data center	%	?	30%	60%	Hold
% of agency data centers independently metered or advanced metered and monitored on a weekly basis	%	?	90%	100%	Hold
Reduction in the number of agency data centers	%	?	20%	40%	Hold
% of agency, eligible electronic products with power management and other energy-environmentally preferable features (duplexing) actively implemented and in use	%	81%	95%	100%	hold
% of agency data centers operating with an average CPU utilization of 60-70%	%	See Footnote *	50%	75%	hold
% of agency data centers operating at a PUE range of 1.3 – 1.6	%	See Footnote *	25%	50%	hold
% of covered electronic product acquisitions that are EPEAT- registered	%	95%	95%	95%	hold
% of agency data center activity implemented via virtualization	%	See Footnote *	30%	40%	hold
Other, as defined by agency	?	?	?	?	?
Leveraged Investment (funded through annually recurring existing budget items, such as capital improvement, O&M, etc. or ARRA)	\$ M	See Footnote **	See Footnote **	?	
Incremental Investment (funded through new program budget requests specific to this EO)	\$ M	See Footnote **	See Footnote **	?	
Alternative Investment (funded through ESPC, UESC, EUL, PPA, rebates, or other funding assistance)	\$ M	See Footnote **	See Footnote **	?	

Note: \* All information concerning physical data centers, cloud computing and virtualization, bandwidth, CPU, and PUE will be addressed in the Final DOT Data Center Consolidation Plan in compliance with the OMB Federal Data Center Consolidation Initiative.

\*\* Funding information concerning physical data centers will be addressed in DOT FDCCI Plan in compliance with the OMB FDCCI and will represent DOT Common Operating Environment budget numbers (excluding FAA and OIG Operating Administrations).

**f. Department status –**

In 2008, DOT developed a Green Procurement Plan (GPP) to provide agency-wide guidance for implementing an effective program and to enhance and sustain the DOT mission through cost effective acquisition that achieves compliance and reduces resource consumption and solid and hazardous waste generation. DOT's procurement of green products and services contributes to sound management of the Department's financial resources, natural resources, and energy. DOT has updated the GPP to address the requirement of EO 13514 on purchasing EPEAT-registered products.

DOT has implemented a Green Procurement Compliance System to ensure the GPP is being implemented. The Green Procurement Compliance System was initiated to 1) determine if the goals established in the GPP are being implemented and progress made; and 2) provide a mechanism to provide continual improvement in contracting and using environmentally friendly materials and services.

DOT developed and initiated an Electronics Stewardship Plan (ESP) under EO 13423 on February 11, 2008. The purpose of the ESP is to: enhance and expand existing DOT sustainable practices in order to comply with 13423: reduce energy consumption: reduce toxics disposal related to electronics, and save money through reduced energy consumption and increased electronic life expectancy.

DOT has implemented a number of electronic stewardship initiatives that target the energy efficiency and waste reduction aspects of electronic products that include a study of automated power management, development of policies and guidelines, and the Electronic Product Environmental Assessment Tool.

DOT uses vendors' "Take Back" Program for electronic equipment. Additionally, DOT performs on site review and coordinates them with FEC and EPA to ensure completeness and sound recycling practices.

DOT has a telework policy in place. DOT offers online telework training for managers and employees and a mandatory IT security training for all teleworkers. In addition, DOT offers other resources for performance management, including a work plan structure agreement that provides a framework for the discussion that needs to take place between the manager and the employee about expectations.

DOT will comply with the OMB Federal Data Center Consolidation Initiative. Preliminary Inventory data collection was completed on April 30, 2010. This information will be used to develop a DRAFT DOT Data Center Consolidation Plan by June 30, 2010. The Final Asset Baseline as well as Final Data Center Consolidation Plan will be submitted to OMB by September 30, 2010. All of these dates are subject to change pending OMB guidance.

## 10. GOAL 10: Department Innovation

The Department for Transportation (DOT) has a long history of innovation in policies, programs, practices and technology associated with transportation. DOT has shown the same leadership in developing and implementing policies, practices and technology to expand the Department's sustainability mission beyond what is required in EO 13514 and beyond what is described elsewhere in this document.

The primary tool DOT will use to communicate and monitor the requirements and activities across functions of the Department and across its Operating Administrations is the newly developed "Sustainability Mission Management tool" or SM2. SM2 is a web-based communications tool that serves as the integrated monitoring and communication platform for the Higher Tier EMS and implementation and tracking of EO and statute-related activities and requirements throughout the Department. This tool also serves as the Department's internal Sustainability scorecard with metrics for EO 13514, EO 13423, and other Departmental requirements and objectives. (DOT has already built this tool and will share this valuable, almost no-cost tool with the Federal community). This tool allows for centralized tracking of hundreds of activities across the twelve operating administrations, it has communication, reporting, and alerting functionality and more.

The following are examples of innovative activities developed and implemented which will assist the DOT to meet its sustainability mission and the nine associated goals identified in this Plan.

### 1. GOAL: Scope 1 & 2 Greenhouse Gas Reduction

- DOT has founded the Transportation and Climate Change Clearinghouse (TCCC) to be the focal point of technical expertise on transportation and climate change.
- On-going Carbon Sequestration Pilot Program – FHWA has selected two DOT sites for a pilot program related to climate change. The goals of the program are 1) to develop successful strategies for sequestering carbon on rights-of-way and other lands managed by State DOTs through focused native vegetation management; 2) to determine whether revenue can be generated from the sale of "carbon credits" developed from these projects; and 3) to determine whether FHWA should pursue a national-level effort and provide relevant decision support tools to state DOTs.

### 2. GOAL: Scope 3 Greenhouse Gas Reduction

- Evaluate how land use, transportation infrastructure, and policy changes affect travel activity and GHG emissions – The objective of this research is to develop analysis tools that will allow local and regional transportation planners and policy makers in small to medium metropolitan areas evaluate how land use, transportation infrastructure, and policy changes affect travel activity and GHG emissions.
- Developing effective policy approaches for slowing Vehicle Miles Traveled (VMT) Growth. Through research and dialogue with pivotal stakeholders this project will help determine the extent to which new energy/GHG performance goals may complement or conflict with fundamental transportation system performance and inform the development of effective policy frameworks for slowing VMT growth and reducing GHG emissions.
- The FHWA Resource Center Air Quality Technical Services Team provides assistance with the use of existing and new models and tools to analyze GHG emissions, including a workshop on EPA's MOVES Model.



- The FAA and Volpe Center created the Aviation Environment Design Tool (AEDT). AEDT can assess a broad set of environmental impacts associated with air travel. This tool includes a rigorous methodology to estimate carbon dioxide and other greenhouse gases associated with each individual flight. Actual data from every flight across the globe can be accessed to calculate the supplemental emissions associated with airport delays (e.g. taxiing on runways, and holding patterns for landings). AEDT is internationally recognized as the “gold” standard for aviation emissions calculations. The tool can be used to provide accurate emissions for Federal air travel.

### **3. GOAL: Develop/Maintain Comprehensive Greenhouse Gas Inventory**

- DOT TCCC researches and evaluates transportation strategies to reduce GHGs and to prepare for the potential effects of climate change on transportation systems. Provides transportation stakeholders with up-to-date information on transportation and climate change milestones through newsletters (e.g., Transportation and Climate Change News).
- Interagency Working Group on Transportation, Land Use, and Climate Change explores partnership opportunities to address GHG emissions from transportation sources. A staff working group is expanding the discussion to include how GHGs can be reduced through better land use planning and travel demand management that would result in lower VMT.

### **4. GOAL: High-Performance Sustainable Design / Green Buildings**

- Developed the High Performance and Sustainable Buildings Implementation Plan (SBIP), which provides DOT policy for achieving the high performance/sustainable buildings design goals of EO 13423, and building energy and water requirements of the Energy Independence and Security Act (EISA).

### **5. GOAL: Regional and Local Planning**

- DOT, in coordination with the other agencies, reviewed existing policies and practices associated with site selection for Federal facilities; and provided recommendations to the CEQ Chair regarding sustainable location strategies for consideration in Sustainability Plans, as required by Section 10 of EO 13514.
- Ongoing research to reduce energy usage through transportation planning for mega-regions. This research will produce tools to help transportation planners reduce the transportation system's energy consumption. The research will identify and refine organizational tools that can build planning capacity and enable planners from numerous MPOs to plan as a unit – a mega-region – and will produce a sketch planning computer tool to help planners implement the capacity-building and mega-region tools.
- Developing Sustainability Evaluation and Planning Guidance for Transportation Systems that will focus on how to incorporate sustainability in transportation planning to address challenges facing the nation's transportation infrastructure including nonrenewable fuel depletion and the resulting energy insecurity, GHG emissions, global climate change, local air quality, fatalities and injuries, congestion, noise pollution, low mobility, ecosystem damage and lack of equity.

### **6. GOAL: Water Use Efficiency and Management**

- Developed the High Performance and Sustainable Buildings Implementation Plan (SBIP), which provides DOT policy for achieving the high performance/sustainable

buildings design goals of EO 13423, and building energy and water requirements of the Energy Independence and Security Act (EISA).

#### **7. GOAL: Pollution Prevention and Waste Elimination**

- DOT developed a Green Procurement Plan (GPP) to enhance and sustain the DOT mission through cost effective acquisition that achieves compliance and reduces resource consumption and solid and hazardous waste generation.

#### **8. GOAL: Sustainable Acquisition**

- DOT developed a Green Procurement Plan (GPP) to enhance and sustain the DOT mission through cost effective acquisition that achieves compliance and reduces resource consumption and solid and hazardous waste generation.

#### **9. GOAL: Electronic Stewardship and Data Centers**

- DOT has implemented a number of electronic stewardship initiatives that target the energy efficiency and waste reduction aspects of electronic products that include a study of automated power management, development of policies and guidelines, and development of the Electronic Product Environmental Assessment Tool.

DOT has identified additional innovative initiatives that will build on its past experience and will provide the foundation for meeting the sustainability goals well into future. The following are additional initiatives DOT is considering as part of this Plan:

#### **1. GOAL: Scope 1 & 2 Greenhouse Gas Reduction**

- Establish a DOT zero net energy goal for buildings with one pilot before 2020.

#### **2. GOAL: Scope 3 Greenhouse Gas Reduction**

- Identify Carbon sequestration pilot; opportunity for Carbon sequestration initiative DOT-Wide.
- Partner with federal agencies to evaluate the emissions calculation tool for aviation (AEDT) developed by FAA as the source data for business travel emissions when determining Scope 3 emissions.

#### **3. GOAL: Develop/Maintain Comprehensive Greenhouse Gas Inventory**

- Improve functionality of existing systems or develop a new DOT-wide data management system to capture facility and energy data and other EO requirements, and include best practices.
- Develop training modules to educate drivers on fuel-smart driving practices, such as minimizing idling.

#### **4. GOAL: High-Performance Sustainable Design / Green Buildings**

- Build a program with new and existing FTEs and vendor subject matter experts for identifying, prioritizing and executing a building upgrade program to meet the EO and HPSB goals, including a highly trained and experienced 'performance contracting' center of excellence that includes facility managers, energy managers and procurement specialists.

#### **5. GOAL: Regional and Local Planning**

- Streamline the National Environmental Policy Act (NEPA) process (e.g., prepare Programmatic Environmental Impact Statements) in order to expedite renewable energy projects.
- Promote sustainable lifestyle choices across DOT's community of employees. Establish sustainability siting metrics for new DOT sites: (e.g. connectivity/concentration of intersections, proximity to bicycle network, distance from transit stations, etc.).

**6. GOAL: Water Use Efficiency and Management**

- Develop a set of web-based 'toolboxes' for each goal, including Water Use Efficiency and Management, to provide the processes and tools to achieve each goal.

**7. GOAL: Pollution Prevention and Waste Elimination**

- Create guidance for developing waste disposal contracts that require actual weights as opposed to contracting for cubic yards of waste accumulation capacity and develop metrics.
- Undertake a case study to showcase the possibilities of reducing waste along entire value chain through a business ecosystem approach.

**8. GOAL: Sustainable Acquisition**

- Identify Partnerships for developing/investing in innovative on-site renewable energy projects (e.g., Smart-grid technologies).
- Establish sustainable procurement criteria to require that DOT's suppliers meet the sustainability goals established in this Plan.

**9. GOAL: Electronic Stewardship and Data Centers**

- Develop a program that rewards managers for improving the efficiency of operations, using metrics to determine the energy efficiency of a data center by dividing the amount of power entering a data center by the power used to run the computer infrastructure within it.

**Section 3: Agency Self Evaluation**

- I. The Department of Transportation (DOT) has in place the major elements needed to develop and manage the Strategic Sustainability Performance Plan. The following are the responses to questions in the plan template. Two questions are answered “no” but with an explanation.

Does your plan provide/consider overarching strategies and approaches for achieving long-term sustainability goals?	Yes
Does your plan identify milestones and resources needed for implementation?	Yes
Does your plan align with your agency’s 2011 budget submission? (See Explanation 1)	No
Is your plan consistent with your agency’s FY 2011 budget and appropriately aligned to reflect your agency’s planned FY 2012 budget submission?(See explanation 1 and 2)	No
Does your plan integrate existing EO and statutory requirements into a single framework and align with other existing mission and management related goals to make the best use of available resources?	Yes
Does your plan provide methods for obtaining data needed to measure progress, evaluate results, and improve performance?	Yes

Explanation 1: The Department of Transportation has already implemented some of the initiatives described in the Plan and many new initiatives have been identified. However, DOT’s budget is developed 2 years in advance. As a result, new initiatives are not accounted for in the FY 2010 and FY 2011 budget submission. This is compensated for by focusing on planning and other low-budget initiatives through 2011 with the expectation that the Department will be able to ramp up activity in the 2012 budget year.

Explanation 2: The Department of Transportation will attempt to align the resources necessary for implementation of this plan in its FY 2012 budget submission to OMB. However, the FY2012 budget submission is not due until August 2010. Therefore, 2012 budget requests are not captured in this plan.

- II. Planned actions for the following year from July 2010 - Dec 2010 & January 2011 -June 2011

**Planned Actions from July 2010 to December 2010:**

The planned actions are organized by Transportation Management, Energy Management and Environmental Stewardship.

*Transportation Management*

- Direct OAs to right-size their fleets, target non-waivered AFVs located where alternative fuel is not available using DOE tools.
- Implement a real time, interactive data system that will monitor DOT organizations’ fuel usage of alternative fuel in non-waivered AFVs to include an early intervention process to increase alternative fuel usage.
- Implement Plan for renewable fuel pump installations, as required by EISA section 246.

*Energy Management*

- Monitor performance through monthly meetings, annual energy report, and DOT internal scorecard.
- Provide ESPC/UESC training for procurement, real property, and environmental specialists in OST and the Operating Administrations.

- Create a priority buildings inventory list which identifies the best opportunities for sustainability improvement projects based on life-cycle and return on investment (e.g. water and energy conservation and GHG reductions). The list will create a single building upgrade program, and buildings will be expected to meet all Sustainable Buildings guiding principles.

#### *Environmental Stewardship*

- Deploy HQ, FAA and MARAD EMS; and update policy order and manual, self-declaration and audit protocols for DOT/OST Higher Tier EMS.
- Provide 12 contracts containing each of the 6 designated green product/services and representing all Operating Administrations.

#### **Planned Actions from January 2011 to June 2011:**

The following are planned actions to be undertaken from January 2011 through June 2011. These actions are intended to provide the foundation to ensure DOT leadership position in the future.

#### *Energy Management*

- Systematically review, update and modify the real property portfolio based on the high performance/sustainable buildings (HPSB) goals and develop a single-source HPSB data system integrating utility consumption, project and physical asset information.
- Build a center of excellence on Greenhouse Gases, Climate Change, Adaptation and Transportation vehicles and systems through its Transportation and Climate Change Clearinghouse (TCCC).
- Implement aggressive energy and fuel savings activities to reach the GHG reduction target.
- Develop plan to reduce the environmental and energy impacts of data centers.

#### *Environmental Stewardship*

- Develop a portfolio of technologies to allow employee productivity to be transient resulting in reducing DOT's scope 3 GHG emissions.
- Identify best value water efficiency opportunities.
- Hire additional and replacement personnel with the skills, knowledge and capabilities to support DOT in attaining the goals in the Plan.
- Deploy the technology needed to support all phases of the Plan.

## **Appendix 1: Agency Policy Statement**

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See Attachment.

## **Appendix 2: Sustainable Buildings Implementation Plan**

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See attachment.

### **Appendix 3: Green Purchasing Plan**

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See attachment.



## **Appendix 4: Electronic Stewardship Plan**

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See attachment.

**Appendix 5: DOT Executable Plan for EISA 2007, Section 142**

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See attachment

**Appendix 6: Acronyms and Abbreviations**

AFV	Alternative Fuel Vehicle
BTU or Btu	British Thermal Unit
C&D	Construction and Demolition
CEQ	Council on Environmental Quality
CIO	Chief Information Officer
CIO	Chief Information Officer
CPO	Chief Procurement Officer
CPU	Central Processing Unit
DOT	Department of Transportation
EISA	Energy Independence and Security Act
EMS	Environmental Management System
EO	Executive Order
EPA	Environmental Protection Agency
EPAct	Energy Policy Act
EPCRA	Emergency Planning and Community Right-to-Know Act
EPEAT	Electronic Product Environmental Assessment Tool
ESP	Electronics Stewardship Plan
ESPC	Energy Services Performance Contract
EUL	Enhanced Use Lease
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulations
FEMP	Federal Energy Management Program
FTE	Full Time Employee
FY	Fiscal Year
GGE	Gasoline Gallon Equivalent
GHG	Greenhouse Gas
GPP	Green Procurement Plan
GPRA	Government Performance and Results Act
GSA	General Services Administration
GSF	Gross Square Feet
HPSB	High Performance Sustainable Buildings
IT	Information Technology
LEED	Leadership in Energy and Environmental Design
mtCO <sub>2</sub> e	Metric tons of Carbon Dioxide Equivalent
NEPA	National Environmental Policy Act
NextGen	Next Generation Air Transportation System
O&M	Operations and Maintenance
OMB	Office of Management and Budget
OST	Office of the Secretary
ROI	Return on Investment
SBIP	Sustainable Building Implementation Plan
SF	Square Feet or Square Footage
SNAP	Significant New Alternatives Policy
SSO	Senior Sustainability Officer
UESC	Utility Energy Services Contract



