



# **Sustainability and Implementation Plan**



**United States  
Department of Transportation**

**September 2018**

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## Executive Summary

### Overview

The United States (U.S.) Department of Transportation (DOT or Department) ensures our Nation has a fast, safe, efficient, accessible, and convenient transportation system that meets our vital national interests. The national transportation system improves the quality of life for all Americans, by increasing the productivity and competitiveness of workers and businesses. To effectively support and manage this system, DOT consistently strives to enhance efficiency and reduce costs throughout its operations.

This Sustainability and Implementation Plan (the Plan) showcases the Department's significant energy conservation and cost saving accomplishments in Fiscal Year (FY) 2017 and 2018, and identifies future actions to enhance efficiency, reduce waste, avoid costs, manage risks, and address the needs of the American public. The Plan highlights DOT's recent activities and priority strategies across ten areas, such as energy and water efficiency, performance contracting, sustainable buildings, fleet management, and sustainable acquisition.

This Plan also highlights how DOT has embraced the call to action in Executive Order (E.O.) 13834, "Efficient Federal Operations." The E.O. directs Federal agencies to meet statutory requirements related to facilities, vehicles, and overall operations in a manner that increases efficiency, optimizes performance, eliminates unnecessary use of resources, and protects the environment. Additionally, this Plan supports the Operational Efficiency strategy included in DOT's 2018 Strategic Plan and E.O. 13834.

### Efficient Operations

DOT strives to enhance efficiency and minimize environmental risks in its operations by promoting innovative and cost effective energy, water, and waste practices. The Department owns or leases over 31 million square feet of facilities and air traffic control assets. DOT has made significant progress in saving taxpayer dollars by reducing energy and water use, and minimizing environmental impacts across its buildings, operations and fleet. For example, in FY 2017, the Federal Aviation Administration (FAA) awarded over \$13 million in performance-based contracts at multiple Federal sites for energy efficiency improvements. Over the life of these contracts, FAA estimates it will reduce \$16.2 million in energy costs which will be reinvested into new infrastructure. Additionally, many DOT facilities have improved the efficiency of their mechanical systems and equipment, avoiding over \$400,000 of costs during FY 2017.

The Department maintains a fleet of over 6,000 owned and leased vehicles located across all U.S. states and territories. Most of DOT's fleet is used by aviation, highway, railroad, and pipeline safety inspectors and the Office of Inspector General law enforcement officials. DOT uses vehicle data analysis tools to optimize fleet performance and fuel consumption. Across the fleet, DOT has achieved a 29 percent reduction of petroleum fuel, compared to its FY 2005 baseline.

## Strategic Priorities

The Department's successes represent the hard work and commitment of employees across the Nation. To build on past success and further the goals of E.O. 13834, below are the Department's sustainability priorities for FY 2019:

- Performance Based Contracts (PBCs) – Award \$2 million in new projects and continue implementation of cost-saving measures in previously awarded projects.
- Comprehensive Building Efficiency Evaluations – Prioritize completion of evaluations at best value sites (i.e., those with potential for the largest cost savings through energy and water efficiency projects).
- Energy and Water Utility Management – Meet and exceed statutory energy and water reduction requirements through efficiency measures, where cost effective. Continue to improve quantity and quality of measured utility consumption data.
- Fleet Management – Maintain over 20 percent reduction in petroleum consumption relative to FY 2005 baseline by optimizing fleet composition, eliminating underutilized vehicles, and purchasing fuel efficient and/or alternative fuel vehicles (AFVs).

## Conclusion

DOT is proud of its tremendous progress in making its operations more efficient and cost effective while responsibly protecting the environment. The Department will continue to emphasize saving taxpayer dollars through enhancements and will pursue future actions to avoid costs, reduce waste, manage risks, and address the needs of the American public. The Office of the Secretary of Transportation (OST) will work closely with Operating Administrations (OAs) to monitor and report on performance metrics and ensure compliance with E.O. 13834 and other statutory requirements. DOT will also update Departmental policies and programs to align with E.O. 13834.

The above summary provides a snapshot of the Department's progress and strategies for several key initiatives. The next section of the Plan follows the template provided to Federal agencies by the White House Council on Environmental Quality (CEQ) and contains more information about strategies and performance milestones across the energy and environmental goals in E.O. 13834.

## Implementation Summary

This section provides an overview of progress on energy and environmental goals, along with priority strategies to meet the statutory and other goals established by E.O. 13834, Efficient Federal Operations. It is important to note that DOT priorities and budgets are evolving and strategies listed in this Plan are subject to review and change. Additionally, the accomplishments and strategies presented below are highlights of DOT sustainability efforts, and may reflect activities and plans for one or more OA.

### 1. Buildings

#### Facility Energy Efficiency

**Status FY 2017:** 31.4% reduction in energy intensity (British thermal units (BTU)/Gross Square Feet (GSF)) compared to FY 2003 baseline; 19% reduction in energy intensity BTU/GSF compared to FY 2015.

Implementation Status	Priority Strategies and Planned Actions
<p>A. Upgraded building systems to reduce energy use and costs:</p> <ul style="list-style-type: none"> <li>• Improved the efficiency of mechanical systems and equipment and saved over \$400,000 in FY 2017.</li> <li>• Installed meters to monitor energy use and improve building energy efficiency. FAA installed 68 meters at the Mike Monroney Aeronautical Center (MMAC) in FY 2017.</li> <li>• Reduced electricity costs by improving operational procedures. The Maritime Administration (MARAD) installed timers on dehumidifiers to operate during off-peak electricity rate hours.</li> <li>• Reduced energy usage and costs by including energy efficiency as a performance specification in agency lease solicitations over 10,000 GSF.</li> <li>• In FY 2018, Volpe<sup>1</sup> made a significant investment to reduce leaks and replace traps to lower overall steam consumption.</li> </ul> <p>B. Reduced electricity use and expenses:</p> <ul style="list-style-type: none"> <li>• The Federal Highway Administration (FHWA) estimates electricity consumption in FY 2017 was 19 percent lower than in FY 2015.</li> <li>• Installed energy efficient LED lights and saved approximately \$200,000.</li> </ul>	<p>A. Make energy efficiency investments in buildings:</p> <ul style="list-style-type: none"> <li>• Pilot and evaluate new efficiency technologies: FAA estimates harmonic filters on variable frequency drives will save at least \$90,000 per year in electricity costs at 22 sites. Also, replace centrifugal fixed speed chillers with variable speed chillers with low condenser water capabilities.</li> <li>• Install LED lighting to save at least \$85,000 per year in electricity costs. Additional benefits include reduced mission disruption, less maintenance, and lower landfill costs.</li> <li>• Complete retro-commissioning effort and reset mixed air temperature set points at several MMAC facilities.</li> </ul> <p>B. Collect and utilize energy use data to optimize building performance:</p> <ul style="list-style-type: none"> <li>• Install building level meters and conduct energy and water audits to identify potential water and energy savings, where cost effective.</li> <li>• Use computer management systems to improve efficiency, such as the use of occupancy sensors to reduce lighting-related electricity use.</li> </ul>

<sup>1</sup>The John A. Volpe National Transportation Systems Center (Volpe) located in Cambridge, MA is part of the Office of the Secretary of Transportation.

**Efficiency Measures, Investment, and Performance Contracting**

**ESPC and UESC investment / number of projects FY 2017:** \$13.2M and two projects.

**EISA-covered facilities evaluated for efficiency opportunities FY 2017:** 67%

Implementation Status	Priority Strategies and Planned Actions
<p>A. Awarded over \$13 million in PBCs at FAA sites:</p> <ul style="list-style-type: none"> <li>• DOT’s largest Energy Savings Performance Contract (ESPC), to date, for energy conservation projects at 21 FAA sites across nine states. Contract includes lighting and building automation system upgrades along with installation of photovoltaic (PV) systems. Allows FAA to invest \$16.2 million (from energy savings) in new infrastructure over the life of the contract.</li> <li>• FAA’s first ESPC Enable contract at the Corpus Christi Air Traffic Control Tower in Texas. Contract includes a new HVAC system, boilers, PV system and xeriscaping for outdoor property at the site. Projected annual energy savings of 152,988 kWh, allows FAA to redirect approximately \$2.5 million over the life of the contract to other energy savings projects.</li> <li>• Second Utility Energy Services Contract (UESC) at MMAC in Oklahoma. Contract includes replacing cooling towers and chillers, lighting upgrades and mechanical system improvements. Once completed, these actions are expected to save approximately 1.5 million kWh and \$138,000 annually.</li> </ul>	<p>A. Award at least one project valued at \$12 million in FY18 and award at least one project valued at \$2 million in FY19.</p> <p>B. Continue implementation of conservation measures in previously awarded PBCs:</p> <ul style="list-style-type: none"> <li>• Install efficiency upgrades and on site renewable energy at multiple FAA PBC sites. Should reduce electricity use approximately 6 million kWh and save at least \$10 million.</li> </ul> <p>C. Award one or more PBCs to upgrade building systems and reduce operating costs:</p> <ul style="list-style-type: none"> <li>• Expect to award multi-site PBC in Hawaii. Should reduce electricity use approximately 3 million kWh, and generate at least 1 million kWh of renewable energy.</li> </ul> <p>D. Incorporate performance contracting into planning activities to meet energy/water efficiency requirements:</p> <ul style="list-style-type: none"> <li>• Use existing PBCs to inform future proposals and processes for sustainment and modernization projects.</li> </ul> <p>E. Identify potential on-site renewable energy projects in PBCs.</p> <p>F. Continue comprehensive energy and water evaluations at multiple sites by leveraging internal resources and PBC processes.</p>

**Operational Context:**

- While the Department continues to maximize use of PBCs where applicable and cost effective, but opportunities are constrained by:
  - Low building inventory—only OST and the following OAs own or directly lease real property: FAA, FHWA, MARAD, and the Saint Lawrence Seaway Development Corporation (SLSDC). Only FAA and MARAD own ten or more buildings.
  - Safety requirements—many potential buildings contain energy intensive, critical infrastructure (e.g., radars) that cannot be modified.
- While the Department continues to strive to meet the Energy Independence and Security Act of 2007 Section 432 comprehensive energy and water evaluation requirements, progress is tempered by:
  - Funding, resources, and expertise availability—therefore, this work and resources are being re-evaluated.
  - Geographic disparity—many sites are very remote and difficult to evaluate every four years.

## Renewable Energy

**Status FY 2017:** 18.5% of total energy consumed came from renewable energy sources.

Implementation Status	Priority Strategies and Planned Actions
<p>A. Reduced electricity by using renewable energy:</p> <ul style="list-style-type: none"> <li>• FAA installed an on-site solar PV system that produces approximately 700,000 kWh per year and saves \$30,000 annually.</li> <li>• MARAD generated on-site renewable energy from heat pumps and solar PV systems.</li> </ul> <p>B. Utilized innovative contracting mechanisms for renewable energy projects:</p> <ul style="list-style-type: none"> <li>• SLSDC used a Power Purchase Agreement to procure solar PV equivalent to 1,650 MWh.</li> </ul>	<p>A. Explore opportunities for on-site renewable energy using appropriated funds or PBCs:</p> <ul style="list-style-type: none"> <li>• FAA is considering installing solar PV using PBCs, which are expected to save approximately \$1.5 million annually in energy costs.</li> <li>• Explore the use of energy storage and small wind turbines.</li> </ul> <p>B. Consider purchasing renewable energy certificates, as needed, to fulfill statutory requirements.</p>

## Water Efficiency

**Status FY 2017:** 17% potable water intensity (gallons/GSF) reduction compared to FY 2007; 17% increase in potable water intensity (gallons/GSF) compared to prior year.

Implementation Status	Priority Strategies and Planned Actions
<p>A. Installed high efficiency, restroom water fixtures.</p> <p>B. Used low and no-cost operational changes:</p> <ul style="list-style-type: none"> <li>• Monitored monthly meter data to reduce waste.</li> <li>• Proactive leak detection and repair generated over \$3,500 in savings at SLSDC in FY 2017.</li> </ul> <p>C. FHWA reduced water use by 35 percent, saving over 2 million gallons of water and approximately \$9,000 annually since FY 2007.</p> <p>D. FAA replaced and upgraded water-cooled HVAC equipment as part of a UESC.</p> <p>E. MMAC installed water meters on 55 buildings and incorporated the data into existing systems.</p> <p>F. Volpe re-used irrigation and cooling tower water, saving approximately \$25,000 annually in fees.</p>	<p>A. Continue using low and no-cost operational changes such as upgrading water fixtures.</p> <p>B. Continue energy and water evaluations to identify water conservation projects and water meter installation, where cost effective.</p> <p>C. Utilize PBCs that include indoor and outdoor water saving measures.</p> <p>D. Use green infrastructure features for storm and wastewater management to improve onsite water capture and utilize reclaimed water.</p>

### Operational Context:

- Water is inexpensive in many areas, which makes funding and implementing water conservation projects challenging because they often have poor financial paybacks.
- Most of DOT's water consumption is estimated from expense data since utility invoices are centrally managed and consumption data is not recorded in the payment system. DOT will try to get access to better water use data but this may require expensive system investments.

**High Performance Sustainable Buildings)**

**Status FY 2017:** 4% of owned buildings (less excess) by square foot or 3% by number of buildings meeting sustainability metrics.

Implementation Status	Priority Strategies and Planned Actions
<p>A. Increased High Performance Sustainable Buildings (HPSB) compliant square footage:</p> <ul style="list-style-type: none"> <li>• FAA used integrated design principles and anticipates savings of \$35,000 annually.</li> <li>• FAA verified Guiding Principles compliance for MMAC’s 305-CSR building.</li> </ul> <p>B. Improved monitoring and verification:</p> <ul style="list-style-type: none"> <li>• Installed meters, conducted energy audits, and improved data reporting methods.</li> </ul> <p>C. Implemented cost-saving energy conservation measures such as installing new cooling towers, which improved HPSB compliance and reduced operational costs.</p>	<p>A. Continue to evaluate and track buildings for HPSB compliance:</p> <ul style="list-style-type: none"> <li>• Develop documentation process for HPSB implementation.</li> <li>• FAA will verify compliance for two additional MMAC buildings.</li> </ul> <p>B. Optimize building system performance, where cost effective:</p> <ul style="list-style-type: none"> <li>• Apply no-cost retro-commissioning results to improve building system performance.</li> <li>• MARAD will install meters in all buildings to improve efficiency.</li> </ul> <p>C. Incorporate HPSB design into future improvement projects:</p> <ul style="list-style-type: none"> <li>• Create facility master plans to guide capital improvements and energy saving measures.</li> <li>• MARAD strives to make each major renovation Guiding Principle compliant.</li> <li>• Volpe will design and build a new HPSB and Leadership in Energy and Environmental Design Gold compliant facility, at no direct cost to the government.</li> </ul>

**Operational Context:**

- At many sites, it is not cost effective to implement all Sustainable Building Principles. Therefore, this work may not always be implemented with current capital funding constraints.
- The system of record, Energy Star® Portfolio Manager, where evaluations should be completed and tracked, has not been updated with the current Guiding Principles.

**Waste Management and Diversion**

**Status FY 2017:** 37% diversion of solid (non-hazardous) waste from landfills.

Implementation Status	Priority Strategies and Planned Actions
<p>A. Reduced waste through source reduction.</p> <p>B. Increased scope and capacity of recycling programs and provided funding to purchase bins and other supplies to facilitate recycling.</p> <ul style="list-style-type: none"> <li>• Volpe updated their cafeteria waste disposal displays and included examples of all waste types, with clear recycling, composting or trash disposal directions.</li> <li>• SLSDC implemented a zero-sort recycling effort and saved more than \$100,000 by diverting recyclables, soil, and concrete from landfills.</li> <li>• MARAD projects a 3% increase in its FY 2018 waste diversion performance.</li> </ul> <p>C. Improved waste data quality:</p> <ul style="list-style-type: none"> <li>• Incorporated visual inspection of waste containers (e.g., fullness) with Environmental Protection Agency conversion factors to calculate volume.</li> </ul> <p>D. Volpe implemented a composting program and increased solid waste diversion</p>	<p>A. Increase waste diversion by expanding recycling locations and materials accepted.</p> <p>B. Create marketing materials about recycling to educate employees:</p> <ul style="list-style-type: none"> <li>• FAA will prepare articles for the monthly newsletter and increase signage.</li> </ul> <p>C. Continue to seek measured waste data.</p> <p>D. Use Inventory Management Plans to reduce, substitute, or eliminate use of chemicals.</p>

**Operational Context:**

- Many DOT facilities have implemented a system for receiving actual data from waste management companies. However, where actual waste and recycling data are not readily available, diversion rates are estimated using a visual inspection or per capita estimation factor.

## 2. Fleet Management

### Transportation /Vehicle Management

**Status FY 2017:** 28.7% reduction of petroleum fuel use in covered fleet compared to FY 2005; 3.5% reduction of petroleum fuel use in covered fleet compared to prior year.

Implementation Status	Priority Strategies and Planned Actions
<p>A. Reduced covered fleet petroleum consumption:</p> <ul style="list-style-type: none"> <li>• Purchased more fuel-efficient vehicles and reduced vehicle idling time.</li> <li>• OAs reduced petroleum consumption by 25 – 60 percent in FY 2017, respectfully.</li> <li>• Federal Railroad Administration (FRA) purchased two electric minivans in FY 2017 and installed two electric charging stations in FY 2018 at its Transportation Technology Center.</li> </ul> <p>B. Increased use of alternative fuels and vehicles:</p> <ul style="list-style-type: none"> <li>• Replaced conventional vehicles with AFVs. For example, some OAs now have vehicle fleets that are about half AFVs.</li> </ul> <p>C. Reduced fleet size and optimized vehicle use:</p> <ul style="list-style-type: none"> <li>• Vehicle data analysis tools helped optimize fleet performance and fuel consumption. For example, after using data analysis tools, FRA reduced its overall fleet size by 6 percent.</li> <li>• National Highway Traffic Safety Administration has removed four agency-owned vehicles from its HQ fleet in FY 2018.</li> </ul>	<p>A. Optimize and right-size fleet composition by reducing vehicle size, eliminating underutilized vehicles, and acquiring and locating vehicles to match local fuel infrastructure.</p> <ul style="list-style-type: none"> <li>• SLSDC estimates fleet and fuel usage optimization will generate \$20,000 in annual fuel savings.</li> <li>• Pipeline and Hazardous Materials Safety Administration will reduce its fleet size 50 percent by 2020.</li> </ul> <p>B. Increase use and acquisition of AFVs where cost effective.</p> <p>C. Use the Fleet Management Information System to track monthly fuel consumption for agency-owned, U.S. General Services Administration (GSA)-leased, and commercially-leased vehicles.</p> <p>D. Increased the number of facility electric charging stations to allow for more plug-in vehicle use. Identify vehicles to be replaced by like model electric and plug-in hybrid vehicles where cost effective and compatible with mission need.</p>

#### Operational Context:

- Many of DOT's fleet trucks haul mission-essential equipment to complete compliance inspections or perform maintenance. Due to mission requirements, DOT needs fuel efficient vehicles or AFVs that have high ground clearance, large cargo space, and at least medium towing capacity. Currently GSA does not offer alternative fuel light duty trucks that meet these requirements.

### 3. Cross-cutting Operations

#### Sustainable Acquisition/Procurement

**Status FY 2017:** 3.7% increase in percentage point difference of value of contracts with sustainable requirements from prior year.

**Status FY 2017:** 4.6% decrease in percentage point difference of sustainable contract actions from prior year.

Implementation Status	Priority Strategies and Planned Actions
<p>A. Expanded training, updated practices to reflect changes in regulatory requirements, and continued compliance monitoring. Highlights include:</p> <ul style="list-style-type: none"> <li>• Required contracting professionals take sustainable acquisition training.</li> <li>• The Office of the Secretary of Transportation used a Blanket Purchase Agreement example to train staff to insert sustainability clauses into contracts.</li> <li>• Issued OA-wide broadcast messages to highlight the sustainable acquisition requirements.</li> </ul> <p>B. Increased use of bio-based products in OA operations.</p> <p>C. Used Category Management (CM) Initiatives and government-wide acquisition contracts to purchase janitorial supplies to avoid approximately \$250,000. In FY 2018, promoted the use of CM and established a DOT CM Working Group, with participants from Acquisition and Program Management.</p>	<p>A. Promote training for all personnel involved with acquisition.</p> <ul style="list-style-type: none"> <li>• Increase awareness of sustainability clauses and available contract vehicles through training, use of the Virtual Acquisitions Office, and other published policies.</li> </ul> <p>B. Ensure that standard sustainable acquisition language is included in all applicable contracts.</p> <p>C. Use Category Management Initiatives and government-wide acquisition contracts that already include sustainable acquisition criteria.</p> <p>D. Improve quality of data and tracking through the Federal Procurement Data System (FPDS).</p> <ul style="list-style-type: none"> <li>• Review pertinent data elements in FPDS monthly and provide training to ensure compliance.</li> </ul>

#### Operational Context:

- FAA operates its acquisition program under authority separate from the Federal Acquisition Regulation or other contracting directives.
- It is challenging to coordinate agency-wide training efforts for acquisition staff to ensure they are aware of sustainable acquisition requirements.
- DOT's performance is significantly lower due to change in scorecard calculation methodology and does not reflect a substantive change in performance.

## Electronics Stewardship

### Status FY 2017:

- 96% of non-exempt equipment have power management enabled.
- 100% of newly purchased or leased equipment meets energy efficiency requirements.
- 100% of electronic equipment disposed using environmentally sound methods.

Implementation Status	Priority Strategies and Planned Actions
<p>A. Met all procurement and end-of-life electronics stewardship requirements:</p> <ul style="list-style-type: none"> <li>• All applicable monitors and computers acquired were EPEAT registered.</li> <li>• Leveraged NASA Solution for Enterprise-Wide Procurement (SEWP) contract for laptop, desktop and monitor purchases.</li> <li>• All eligible electronics were disposed using environmentally sound methods.</li> </ul> <p>B. In FY 2018, Volpe received an EPEAT Award for excellence in the purchase of sustainable IT products.</p>	<p>A. Use government-wide category management contracts that include sustainable electronics criteria, to purchase new equipment.</p> <p>B. Enable and maintain print management features on all eligible electronics, and report compliance.</p> <p>C. Implement “wake on LAN” solution to facilitate software patching and deployments.</p> <p>D. Ensure reuse and environmentally sound disposal of all excess and surplus electronics, and report compliance.</p> <ul style="list-style-type: none"> <li>• Use GSA Xcess to repurpose equipment.</li> <li>• Use recyclers with eSteward or R2 certification.</li> </ul>

## Greenhouse Gas Emissions

**Status FY 2017:** 36.5% reduction in Scope 1 and 2 greenhouse gas (GHG) emissions from 2008 baseline.

Implementation Status	Priority Strategies and Planned Actions
<p>A. Reduced Scope 1 and 2 GHG emissions through multiple cost- effective strategies including:</p> <ul style="list-style-type: none"> <li>• Implementation of energy conservation measures.</li> <li>• Improvements in operations and maintenance processes.</li> <li>• Optimized use of fuel efficient vehicles.</li> </ul> <p>B. Significantly reduced Scope 3 GHG emissions through:</p> <ul style="list-style-type: none"> <li>• Technology solutions to support telework.</li> <li>• Virtual meetings and web-based trainings.</li> <li>• Promoted alternative work schedules opportunities when feasible, cost effective and consistent with mission-critical duty requirements.</li> <li>• Encouraged the use of public transportation.</li> </ul>	<p>A. Implement priority strategies and planned actions for facility energy efficiency, performance contracting, renewable energy, high performance sustainable buildings, waste management, and fleet management will continue to reduce Scope 1 and 2 GHG emissions.</p> <p>B. Continue to monitor and track GHG emissions</p> <p>C. Continue to promote telework policies and encourage alternative work schedules when feasible, cost effective and consistent with mission-critical duty requirements as required by the 2010 Telework Enhancement Act.</p> <p>D. Continue to reduce business travel and encourage virtual meetings, when cost-effective and consistent with the mission.</p>

## 4. Agency Identified Priorities

These key priorities will help the Department improve performance and reduce operating costs:

### **A. Real Property Efficiency Plan**

To ensure that DOT's real property portfolio is appropriately sized to efficiently provide full mission support, DOT plans to reduce nearly 140,500 square feet from its inventory by 2023. This will build on the 6.5 percent square foot reduction in office and warehouse space over the past five years. To achieve this goal, DOT will regularly evaluate the portfolio for opportunities, issue policy, and enhance its real property management tools.

### **B. Enhancing Old Infrastructure with New Performance Based Contracts**

FAA will pilot an innovative program to address its backlog of operation and maintenance activities for National Airspace System (NAS) critical infrastructure. Drawing from lessons learned through implementing over \$30 million in PBCs, FAA will integrate new PBC funding opportunities for sustainment of NAS infrastructure into old procedures. Future PBCs that use this process will achieve more with less by implementing much needed sustainment projects for mission critical NAS infrastructure throughout the country in a low-cost, energy-efficient way.

### **C. Data Center Efficiency**

DOT estimates it will save or avoid about \$18 million in FY 2018 due to its data center consolidation efforts. The Department is continuing to reduce annual energy use and costs attributable to data centers by identifying data centers for closure, establishing contracts for cloud computing, and implementing the required Data Center Optimization Initiative under the Federal Information Technology Acquisition Reform Act.

### **D. Maritime Administration Resiliency Effort**

The Maritime Administration (MARAD) is pursuing several activities to enhance operational resiliency and reduce or manage risks. MARAD staff at Suisan Bay Reserve Fleet site in Northern California is assessing a project to raise the grade of the approach road to the facility in two areas to ensure continued access during storm surge events. The U.S. Merchant Marine Academy personnel will replace and enhance its seawall to protect the campus from Long Island Sound tidal and wave forces. Additionally, the James River Reserve Fleet staff will install cable stanchions to secure and protect cables and power to fleet craft in the event of flooding or intense storms.

## 5. Notable Projects and Highlights

These innovative projects and notable results are FY 2017 – 2018 highlights:

### **A. Shared Services - Acquisition**

DOT is committed to using shared services where feasible and cost effective. The Department has seen many benefits in using government-wide contracts for purchase of information technology and building utilities. For example, the NASA Solution for Enterprise-Wide Procurement (SEWP) shared services contract that DOT's Office of the Chief Information Officer uses to purchase laptops, desktops and monitors. These contracts automatically include sustainable acquisition criteria and allow DOT to realize cost savings from economies of scale.

### **B. Data Centers**

In support of the Data Center Optimization Initiative, DOT has generated an estimated \$13 million of saved or avoided costs. OST led these activities by overseeing closure of tiered data centers at three locations for a cumulative total of 11 tiered data centers closed to date. For example, the Department closed the Frederick Data Center, reducing physical space from 1,659 to 900 square feet and physical servers from 186 to 22. The Department has also migrated to more efficient data center options, assigned energy managers, and expanded the use of cloud computing to reduce costs and energy requirements. Since FY 2017, all servers purchased by the Department contain power management capabilities to monitor, report, and reduce energy use.

### **C. Intra-Agency Collaboration**

In 2017, FAA's Energy Management and Compliance (EMC) and Terminal Sustainment Programs (TSP) collaborated to upgrade mechanical systems at the Boston Terminal Radar Approach Control Facility. The two groups took an innovative approach - the Energy Management and Compliance group developed project requirements and provided funding, while the Terminal Sustainment Programs provided design and engineering resources. This unique collaboration and resource sharing lowered costs for design and implementation and maximized use of energy efficient technologies. These improvements are projected to save approximately 1.3 million kWh and more than \$158,000 annually.

### **D. Net Zero Buildings**

FAA reduced energy use and operating costs with its first "net zero" energy building. The Tucson International Airport Air Traffic Control Tower was constructed with energy efficient features such as a cool roof, insulated windows, and motion controlled lights. A solar PV system was added to ensure the building generates as much electricity as it uses. FAA estimates these improvements will save \$170,000 in electricity costs annually.

### **E. Green Challenge National Award**

In FY 2018 Volpe received the U.S. Environmental Protection Agency's Federal Green Challenge National Award "Improvement by Target Area – Highest Increased Percentage Over Previous Year" for waste reduction. By expanding their collection program, from only coffee grounds in FY 2016 to cafeteria kitchen food scraps in FY2017, Volpe exponentially increased the amount of waste it composted from 0.2 tons to 4.4 tons. In FY 2018, Volpe continued to expand the collection program to include "front of the house" food scraps, napkins, and paper plates from staff using the cafeteria for composting.

## 6. Acronyms and Abbreviations

<b>Abbreviation</b>	<b>Term</b>
AFVs	Alternative fuel vehicles
BTU	British thermal units
CM	Category Management
CEQ	Council on Environmental Quality
DOT or Department	U.S. Department of Transportation
E.O.	Executive Order
ESPC	Energy Savings Performance Contract
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FPDS	Federal Procurement Data System
FRA	Federal Railroad Administration
FY	Fiscal year
GHG	Greenhouse gas
GSA	U.S. General Services Administration
GSF	Gross square feet
HPSB	High Performance Sustainable Building
kWh	Kilowatt hour
MARAD	Maritime Administration
NAS	National Airspace System
NASA	National Aeronautical and Space Administration
OA	Operating Administration
OST	Office of the Secretary of Transportation
PBC	Performance based contract
PV	Photovoltaic
SLSDC	Saint Lawrence Seaway Development Corporation
UESC	Utility energy services contract