Assistant Secretary of the Army for Civil Works

US Army Corps of Engineers®

2016 Strategic Sustainability Performance Plan

30 June 2016

Updated 30 August 2016

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Table of Contents

Policy Statement 3
Executive Summary 5
Size & Scope of Agency Operations 14
Agency Progress and Strategies to Meet Federal Sustainability Goals 15
- Goal 1: Greenhouse Gas (GHG) Reduction 15
- Goal 2: Sustainable Buildings 21
- Goal 3: Clean & Renewable Energy 30
- Goal 4: Water Use Efficiency & Management 35
- Goal 5: Fleet Management 40
- Goal 6: Sustainable Acquisition 45
- Goal 7: Pollution Prevention & Waste Reduction 50
- Goal 8: Energy Performance Contracts 53
- Goal 9: Electronics Stewardship & Data Centers 56
- Goal 10: Climate Change Resilience 60

Appendix A: 2016 Fleet Management Plan 66
Appendix B: Multimodal Access Plan 71
Survey on Agency Climate Adaptation Plans 83

DEPARTMENT OF THE ARMY
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30 JUN 2016

MEMORANDUM FOR DEPUTY COMMANDING GENERAL, U.S. ARMY CORPS OF ENGINEERS, 441 G STREET, N.W. WASHINGTON, DC 20314

SUBJECT: U.S. Army Corps of Engineers (USACE) Sustainability Policy

1. References:

a. Executive Order (E.O.) 13693, Planning for Federal Sustainability in the Next Decade.

b. Energy Independence and Security Act (EISA) of 2007.

c. Energy Policy Act (EPAct) of 2005.

d. Operation Order (OPORD) 2014-12, USACE Sustainability, Internal Operations & Infrastructure, 14 March 2014 and subsequent fragmentary orders.

e. USACE Sustainability Plan (SP).

2. Purpose. This memorandum updates policy regarding sustainability and implements E.O. 13693.

3. Applicability. This policy applies to all aspects of USACE activities to include contracted work, however, the sustainability outcomes supported on behalf of Federal partners will be accounted for under those partners' reporting procedures.

4. Policy.

a. As a prominent Federal entity, a key participant in the use and management of many of the Nation's water resources, a critical team member in the design, construction, and management of military and civil infrastructure, and responsible members of the Nation's citizenry, the USACE strives to protect, sustain, and improve the natural and manmade environment of our Nation and is committed to sustainability and compliance with applicable environmental and energy statutes, regulations, and Executive Orders.

b. Sustainability is not only a natural part of all USACE decision processes, but should also be a part of our organizational culture. USACE is a steward for some of the Nation's most important natural resources, and we must ensure our stakeholders and partners receive products and services that provide for sustainable solutions that address short and long-term environmental, social, and economic considerations.

c. Focus areas for Fiscal Years 2016 and 2017 are as follows:

- By the end of FY 2017 implementing 80 percent of audit-identified, low and moderate cost energy and water conservation measures;
- By the end of FY 2017 implementing not less than $34.8 million in energy performance contracts;

- Reducing incidence of potable water line breaks by replacing deteriorated water lines;
- Consuming 5 percent alternative fuels relative to total fuel consumption in the non-tactical vehicle fleet;
- Achieving compliance with sustainable acquisition requirements and increasing biobased purchasing;
- Issue USACE Materials Management Policy for solid waste quantification and diversion.

d. To achieve our sustainability goals, USACE will employ a systems approach through the development of annual sustainability plans and investment strategies, execution of those plans and strategies, performance reviews at all levels of Command, and course adjustments as directed by the USACE Strategic Sustainability Committee. The key to success will be the assignment and acceptance of personal responsibility for achieving a sustainable future by all members of the organization.

5. I am confident we can meet these goals and set standards for others to follow. I believe excelling in sustainability is not only good for the Nation and our posterity, but a sound business practice that will ease some of our future operations and maintenance expenses. I have every confidence we will be successful.

Jo-Ellen Darcy
Assistant Secretary of the Army
(Civil Works)

CF:

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Executive Summary

Vision

The mission of the U.S. Army Corps of Engineers (USACE) is to provide vital public engineering services in peace and war to strengthen the Nation's security, support the economy, and reduce risks from disasters. To achieve this mission, USACE contributes to the national welfare and serves the public by providing quality and responsive services to the Nation, the Army, and other customers in a manner that is environmentally, economically, and socially sustainable.

Continued integration of sustainability into the USACE mission and organizational culture is essential to success in achieving federal sustainability goals. USACE will continue to employ a systems-based, continual improvement approach to integrate sustainability into its mission and organizational culture, with an ultimate goal of assignment and acceptance of personal responsibility for achieving a sustainable future by all members of the organization. USACE will continue to use, at all levels of command, a recurring cycle of planning, execution, measurement, performance review, and annual course-correction/redirection, that will integrate sustainability more deeply into its mission and the organizational culture with every passing year.

Sustainability plays a prominent role in the USACE Campaign Plan (UCP). UCP Objective 1c, "Support the Nation and the Army in achieving our energy security and sustainability goals," is organized into three actions:

- Action 1: Achieve federal targets within USACE's internal operations and infrastructure.
- Action 2: Support Army Energy Programs.
- Action 3: Successfully design and construct sustainable facilities (regardless of location).

This USACE 2016 Sustainability Plan (SP) is focused on Action 1 and describes USACE's past sustainability performance and the priority strategies the Command will employ through fiscal year (FY) 2017 to maintain or improve performance. This plan meets the Executive Order (E.O.) 13693, Planning for Federal Sustainability in the Next Decade, Section 14 requirement to annually update an integrated Strategic Sustainability Performance Plan based on guidance prepared by the Chair of the White House Council on Environmental Quality (CEQ).

Leadership

The Assistant Secretary of the Army for Civil Works (ASA(CW)) is the Chief Sustainability Officer and the Senior Point of Contact for Climate Change Adaptation for USACE. The ASA(CW) works with USACE's Deputy Commanding General, Civil Works leadership and the Environmental Community of Practice to lead the Strategic Sustainability Committee (SSC) in driving improved sustainability performance. SSC meetings, conducted three times per year, provide collective review and strategic direction/redirection for the Sustainability Program. Sustainability performance is tracked through the UCP using the Army Strategic Management System and existing management review processes.

Performance Summary Review

The table below summarizes USACE's FY 2015 performance for key sustainability measures per the requirements set forth in E.O. 13514 and E.O. 13423.[1]

Performance Measure	FY 2015 Target	FY 2015 Performance
Goal 1: Greenhouse Gas (GHG) Reduction		
Scope 1 & 2 GHG Emissions. Reduce emissions by 23.1% by FY 2020 from a FY2008 baseline.	-12.6%	-10.3%
Scope 3 GHG Emissions. Reduce emissions by 5% by FY2020 from a FY2008 baseline.	-2.5%	-12.3%
Goal 2: Sustainable Buildings		
Energy Intensity. Reduce building energy intensity by 30% by the end of FY2015 compared to a FY2003 baseline.	-30%	-15.1%
Sustainable Buildings. Ensure that 15% of the Agency's existing Federal building inventory (owned and non-General Services Administration [GSA] leased, above 5,000 gross square feet [GSF]) meet the Guiding Principles by FY2015.	15%	0.0%
Goal 3: Clean and Renewable Energy		
Renewable Energy. Achieve 10% renewable energy use, when compared to total FY 2015 facility electricity use.	10%	16.6%
Goal 4: Water Use Efficiency & Management		
Water Intensity. Reduce potable water intensity by 26% annually through the end of FY 2020, compared to a FY 2007 baseline.	- 16%	-13.7%
Goal 5: Fleet Management		
Fleet Petroleum Reduction. Reduce total vehicle fleet consumption of petroleum by 20% compared to a FY 2005 baseline.	- 20%	-20.1%
Fleet Alternative Fuel Increase Relative to FY2005. Increase total alternative fuel consumption by 10% annually by FY 2015, starting from a FY 2005 baseline.	159.4%	1,151%
Fleet Alternative Fuel Use Relative to Total Fuel. Ensure that at least 5% of fleet fuel consumption is alternative fuel.	5%	1.6%
Goal 6: Sustainable Acquisition		
Sustainable Acquisition. Ensure that at least 95% of applicable contract actions demonstrate compliance with sustainable acquisition goals in EO 13693 (based on a quarterly 5% sample of contracts awarded).	95%	55.6%
Goal 7: Pollution Prevention and Waste Reduction		
Solid Waste Diversion. Ensure at least 50% of non-hazardous solid waste is diverted, through reduction, reuse and recycling, from the land fill.	50%	N/A[2]
Construction and Demolition (C&D) Waste Diversion. Ensure at least 50% of C&D waste is diverted, through reduction, reuse and recycling, from the land fill.	50%	N/A[3]
Goal 8: Energy Performance Contracts		
Energy Performance Contracts. Award $12.5M in energy performance contracts by 31 December 2016.	$12.5	$15.9M
Goal 9: Electronic Stewardship and Data Centers		
Electronics Procurement. At least 95% of monitors, PCs, and laptops acquired meet environmentally sustainable electronics criteria (EPEAT registered).	95%	100%
Power Management. 100% of computers, laptops, and monitors have power management features enabled.	100%	100%
End-of-Life. 100% of electronics disposed using environmentally sound methods.	100%	100%

Goal 1: GHG Reduction

Scope 1 & 2 GHG Emissions	**-10.3 %**

[1] Beginning in FY16, USACE will measure performance for key sustainability measures per the requirements set forth in EO 13693, which revoked EO 13514 and 13423.
[2] Reporting on progress toward the solid waste diversion goal will begin with annual data for FY 2016.
[3] Reporting on progress toward the C&D waste diversion goal will begin with annual data for FY 2016.

Highlights:

- USACE worked with the Federal Chief Sustainability Officer and staff members from CEQ and the Office and Management and Budget (OMB) to set its E.O. 13693 Scope 1 & 2 GHG emissions reduction target at 20 percent by FY 2025, taking into consideration mission expansion to date, and anticipated future mission expansion at two of the Corps' largest energy consuming facilities. As part of the same collaborative initiative with CEQ and OMB, USACE updated its FY 2008 baseline to account for mission expansion through FY 2015.

Challenges:

- Mission expansion at two of USACE's top three covered facilities off-sets nearly all Scope 1&2 GHG emissions reductions made at all other USACE facilities combined.
- Leveraging third-party financing to accelerate the pace of investment in energy efficiency across all USACE facilities.

Strategies and Planned Actions:

- Reduce facility energy usage, improve non-tactical vehicle (NTV) fleet fuel efficiency, and increase alternative fuel consumption, while also increasing acquisition and use of low/no-emission vehicles, to reduce Scope 1 & 2 GHG emissions.
- Leverage appropriated funds and aggressively expand the use of third-party financing through energy performance contracting.
- Develop and implement Major Subordinate Command (MSC) level Sustainability Plans and Investment Strategies to guide USACE's actions and improve performance through FY 2016 – FY 2017.

Scope 3 GHG Emissions	**-12.3 %**

Highlights:

- Achieved Scope 3 GHG emissions reduction target at the end of FY 2015, reporting a 12.3 percent (23,000 metric tons of carbon dioxide equivalent ($MTCO_2e$)) reduction relative to the FY 2008 baseline, most of which resulted from reductions in Temporary Duty (TDY) Travel.

Challenges:

- Maintaining or further reducing USACE's Scope 3 GHG emissions.
- Evaluating and understanding recent increases in emissions associated with TDY travel. USACE reported a substantial increase in business travel emissions in FY 2015 relative to FY2014: 16 percent in air travel and 18 percent in ground travel. Continuation of this trend could negatively affect USACE's performance.

Strategies and Planned Actions:

- Conduct a new employee commuting survey in FY 2017 to update data on employee commuting practices, identify opportunities for reducing Scope 3 commuting GHG emissions, and evaluate policy options.
- Continue to focus on expanding participation in authorized alternative work schedule and telework opportunities.
- Conduct a multimodal access plan (MAP) survey of USACE managers to identify options currently available for teleworking, as well as options being actively considered for implementation agency-wide.
- Use MAP survey results to inform FY 2017 MAP development.

Goal 2: Sustainable Buildings

Energy Intensity	**-15.1 %**
Sustainable Buildings	**0%**

Highlights:

- Adopted Unified Facilities Criteria for High Performance and Sustainable Building Requirements (UFC 1-200-02) in FY 2015 for USACE-Owned and Civil Works facilities.
- Initiated the USACE "Assessment Challenge" as a means to plan for and prioritize individual buildings (5,000 gross square feet (GSF) and greater) for consolidated assessments addressing the 2007 Energy Independence and Security Act (EISA) Section 432 and High Performance Sustainable Buildings (HPSB) requirements.

Challenges:

- Shifting from a budget year constrained planning perspective to a life cycle cost effectiveness planning perspective with the formal adoption of UFC 1-200-02.
- Improving real estate data quality for buildings 5,000 GSF and greater, and prioritizing USACE buildings for HPSB assessments.
- Resourcing the building improvements needed to achieve HPSB compliance. Manpower and funding for HPSB investments comes from the same resource pools that USACE is already utilizing to meet EISA Section 432 requirements and facility energy, water and GHG emissions goals.

Strategies and Planned Actions:

- Implement consolidated EISA Section 432/HPSB assessments at top priority facilities identified by the USACE "Assessment Challenge" to inform development of capital investment projects for incorporation in relevant USACE budgets.
- Continue to work toward incorporation of sustainability in USACE facility portfolio management.
- Continue to track leading metrics focused on execution of audits and implementation of energy and water conservation measures at the largest energy consuming facilities.
- Continue to train and designate energy managers for all USACE covered facilities to ensure that energy information is used effectively in energy management decisions.
- Build into relevant budgets the first increment of dedicated building-level meters in accordance with the USACE 5-Year Metering Plan.

Goal 3: Clean and Renewable Energy

Renewable Energy	**16.6 %**

Highlights:

- Exceeded the target of 10 percent renewable electricity by the end of FY 2015. The success resulted primarily from USACE's long-term, systematic investments in modernization of USACE hydropower generation capabilities. In FY 2015, USACE reported 10 hydropower facilities at which incremental hydropower was being generated and consumed on-site, which

accounted for about 27,000 megawatt hours (MWH) (86 percent) of USACE total renewable electricity consumption.
- Initiated work on the first Civil Works power purchase agreement (PPA), at a covered facility in the USACE North Atlantic Division (NAD). If viable, the PPA will provide approximately 1 megawatt (MW) of solar photovoltaic capacity.

Challenges:
- Passing hydropower investment costs to electric utility customers for investments that do not benefit them directly.
- PPAs are a new contracting option for USACE Civil Works facilities. As such, PPAs entail a significant learning curve and labor investment.

Strategies and Planned Actions:
- Model the results of the USACE Hydropower Modernization Initiative to project increases in incremental hydropower generation and on-site consumption that USACE may expect over the period 2016-2025.
- Issue the first-ever request for proposal (RFP) for a PPA at a Civil Works facility during FY 2018.

Goal 4: Water Use Efficiency & Management

Water Intensity	**-13.7 %**

Highlights:
- Identified the largest water-consuming Civil Works facilities in USACE that account collectively for 75 percent of USACE potable water consumption as a means to focus management attention on facilities with high potential for significant opportunities for water conservation.

Challenges:
- Aging potable water infrastructure, particularly water line infrastructure at campgrounds, continues to cause water line breaks and leaks.
- As the number one (#1) Federal provider of outdoor recreation -- with 370 million visitors annually – visitors to USACE facilities have a very significant impact on USACE water consumption.

Strategies and Planned Actions:
- Continue budget emphasis on water line replacement, particularly at the largest USACE water consuming facilities.
- Continue to track internally, on a quarterly basis, a set of “leading” metrics focused on execution of audits and implementation of water conservation measures.
- Integrate water conservation messaging into existing Sustainable Recreation Initiative to educate campground visitors on water usage.

Goal 5: Fleet Management

Fleet Petroleum Reduction	**-20.1 %**
Fleet Alternative Fuel Increase Relative to FY 2005	**1,151%**

Fleet Alternative Fuel Use Relative to Total Fuel	1.6%

Highlights:

- Exceeded the goals set by E.O. 13514 by reducing fleet inventory, increasing the number of alternative fuel vehicles in the fleet, and 10 percent annual increase in consumption of alternative fuel (AF).
- Reduced fleet-wide greenhouse gas emissions per mile by 1.4 percent in FY 2015 (relative to FY 2014), indicating that USACE is on-track to achieve the EO13693 reduction target.

Challenges:

- Acquisition of vehicles that satisfy USACE's unique mission requirements while also supporting USACE progress on reducing GHG emissions per mile (e.g., procurement of larger, heavier duty vehicles in an alternative fuel configuration).
- Lack of alternative fuel (E85) stations near many USACE operating locations.
- Funding for the development of electric vehicle/zero emission vehicle charging station infrastructure.
- Changing the Agency culture related to non-tactical vehicle fleet management and utilization.

Strategies and Planned Actions:

- Incorporate in the FY 2018 Civil Works budget all recommended plug-in electric vehicle charging station investments as requested by the USACE MSCs.
- Plan collaboratively across the fleet management and vehicle users' communities to acquire zero emission or plug-in hybrid vehicles, and to purchase and install appropriate charging infrastructure for zero emission or plug-in hybrid vehicles, at locations where such vehicles are available in configurations that meet mission requirements
- Continue to partner with agency stakeholders to educate vehicle operators on the importance of AF use in alternative fuel vehicles (AFV).

Goal 6: Sustainable Acquisition

Sustainable Acquisition	55.6 %

Highlights:

- USACE Regional Chiefs of Contracting conducted sustainable acquisition on-the-job trainings with District and Center contracting employees to teach sustainable acquisition directly to USACE contract specialists and contracting officers.

Challenges:

- Federal Procurement Data System (FPDS) does not provide automated capability to meet sustainable acquisition reporting requirements. Lack of automated reporting capability drives agencies to conduct a labor intensive review of contract documents to determine if contracts incorporate applicable sustainable acquisition clauses.

Strategies and Planned Actions:

- Conduct two on-the-job sustainable acquisition training sessions per month across all Districts and Centers.

- Brief the Director on Sustainable Acquisition on Agency progress towards achieving sustainable acquisitions during quarterly Directorate of Contracting Management Reviews (DMRs).
- Issue the USACE Sustainable Acquisition Tool and Guidance to support requirements generators and contracting staff efforts to identify and incorporate appropriate sustainable acquisition requirements in all applicable contract actions.
- Track USACE Sustainable Acquisition performance through the USACE Strategic Sustainability Committee and report twice each year to OMB and CEQ as required.

Goal 7: Pollution Prevention & Waste Reduction

Solid Waste Diversion	**N/A**
C&D Waste Diversion	**N/A**

Highlights:

- A single USACE pilot location recycled approx. 850 lbs. of toner and ink cartridges through participation in the U.S. Postal Service Blue Earth Recycling program.

Challenges:

- Varying local conditions create a challenge for development and issuance of centralized polices which has hampered the USACE efforts to issue a solid waste management and diversion policy. At many Civil Works project locations, modern, market-based recycling services are not available.
- USACE estimates that more than 90 percent of non-hazardous solid waste generated annually at USACE facilities is generated by visitors.

Strategies and Planned Actions:

- Establish a Corps-wide solid waste quantification, diversion, and materials management policy.
- Promote participation in the U.S. Postal Service Blue Earth Recycling Program across USACE by developing policy and guidance for facilities to opt into the program.

Goal 8: Energy Performance Contracts

Energy Performance Contracts	**$15.9M**

Highlights:

- USACE exceeded its President's Performance Contracting Commitment (PPCC) of $12.5M by the end of calendar year (CY) 2016 by awarding $12.9M in FY 2016.
- Centrally tracked all energy performance contracts to ensure projects stay on-track for completion, and resources are allocated to the top priority projects.

Challenges:

- Effectively implementing energy performance contracting for the many small, geographically dispersed USACE facilities.

Strategies and Planned Actions:

- Implement energy savings performance contracts (ESPC) at three out of the top ten energy consuming USACE covered facilities.

- Continue to pursue ESPCs and utility energy services contracts (UESCs) in partnership with the US Army Engineer Support Center, Huntsville (HNC) - a federally recognized leader in energy performance contracting.

Goal 9: Electronics Stewardship & Data Centers

Electronics Procurement	**100%**
Power Management	**100%**
End-of-Life	**100%**

Highlights:

- USACE achieved all federal Electronic Stewardship goals in FY 2015.

Challenges:

- Implementation of Executive Order 13693 requirements for advanced metering and Power Use Effectiveness (PUE) at USACE Process Centers.

Strategies and Planned Actions:

- Implement policies as necessary to meet EO 13693 Electronics Stewardship requirements for advanced metering and PUE determination at USACE Process Centers.
- Develop course(s) of action to achieve PUE of 1.5 or less at existing Process Centers.

Goal 10: Climate Change Resilience

Highlights:

- Submitted the USACE June 2015 Climate Change Adaptation Plan Update to 2014 Plan in June 2015.
- Published a report "USACE Drought Contingency Planning in the Context of Climate Change" in September 2015.
- Submitted a "Report to Congress: US Army Corps of Engineers Western Drought Contingency Actions" in March 2016.
- In connection with the White House Water Summit, publicly released a web tool enabling users to detect nonstationarities, or significant changes, in the statistics of annual maximum daily streamflow at any USGS gage site, March 2016.
- Supported the scenario development and analyses reported in the April 2016 "Regional Sea Level Scenarios for Coastal Risk Management: Managing the Uncertainty of Future Sea Level Change and Extreme Water Levels for Department of Defense Coastal Sites Worldwide."
- Published a report on "Ocean Acidification and its Projected Impacts on U.S. Army Corps of Engineers" in June 2016.
- Collaborated with other agencies to provide climate preparedness and resilience training for water resources planners and engineers, natural resources managers, and senior executives in 2015 and 2016.

Challenges:

- Quantitative assessments incorporating climate-impacted hydrology rely on the production of actionable science to support decision-making and methods and tools to support efficient assessments. We are working with a variety of interagency, international, and academic experts to develop the required information to support more detailed assessments.

Strategies and Planned Actions:

- Continue to implement USACE overarching policy to "… [I]ntegrate climate change preparedness and resilience planning and actions in all activities for the purpose of enhancing the resilience of our built and natural water-resource infrastructure and the effectiveness of our military support mission, and to reduce the potential vulnerabilities of that infrastructure and those missions to the effects of climate change and variability."
- Continued work with external agency, academic and private sector experts to develop and provide enhance downscaled climate information and hydrology, conduct progressively more detailed vulnerability assessments – including supply chain - track mean sea level trends, and provide water resources-related training.
- Complete and release downscaled climate information for Alaska, Hawaii, Pacific Islands, and the Caribbean.
- Develop further guidance for implementation of climate change and resilience measures based on best available science for new and existing infrastructure.

Progress on Administration Priorities

PPCC: USACE achieved its 31 December 2016 commitment ($12.5M) by awarding two ESPCs for a total of $12.9M, and bringing the USACE PPCC investment to a grand total of $15.9M. For FY 2017, USACE will target award of additional ESPCs currently in the pipeline and reported in OMB MAX for a projected total additional investment of $18.9M. For FY 2018, USACE currently projects an energy performance contracting total investment of $5.0M.

Electric and Zero Emissions Vehicles: USACE's plan is to fully leverage the Vehicle Allocation Methodology (VAM) to define the path forward in terms of fleet inventory and composition (e.g., vehicle size) to achieve the E.O. 13693 GHG emissions per mile goal. Absent FY 2016 VAM Guidance, as referenced in E.O. 13693 Implementing Guidance Section 3, USACE plans a two-phased approach: (1) Reduce alternative fuel missed opportunities by 50 percent in FY 2017, and (2) Coordinate the acquisition of plug-in electric vehicles with Civil Works Operations and Management (O&M) Budget requirements for plug-in electric vehicle charging infrastructure beginning during FY 2018 budget development.

Climate Preparedness and Resilience: USACE has participated actively in numerous Administration climate preparedness and resilience activities that are relevant to USACE missions and operations. Examples include but are not limited to the National Drought Preparedness and Resilience Partnership (NDRP), established by Presidential Memorandum in March 2016 and for which USACE is the lead on one action and co-lead on two actions; a Resilient Lands and Waters Initiative to evaluate the viability of using improved forecasts of atmospheric rivers in water control operations; support to the Adaptation Community of Practice "Framework for Building Climate Literacy and Capabilities Among Federal Natural Resource Agencies;" member of the Resilience Indicators Steering Committee which conducted a workshop and will produce a "Review of Ecosystem Resilience Metrics and Indicators;" and participation in the Resilience AmeriCorps Academy and follow-on activities.

Size & Scope of Agency Operations

Agency Size and Scope	FY 2014	FY 2015
Total Number of Employees as Reported in the President's Budget	32,744	32,680
Total Acres of Land Managed	7,700,964	7,667,945
Total Number of Buildings Owned	879	863
Total Number of Buildings Leased (GSA and Non-GSA Lease)	147	150
Total Building Gross Square Feet (GSF)	15,885,264	15,805,367
Operates in Number of Locations Throughout U.S.	660	618
Operates in Number of Locations Outside of U.S.	-	-
Total Number of Fleet Vehicles Owned	717	716
Total Number of Fleet Vehicles Leased	6,732	6636
Total Number of Exempted-Fleet Vehicles (Tactical, Law Enforcement, Emergency, Etc.)	0	0
Total Amount Contracts Awarded as Reported in FPDS ($Millions)	17,207	15,251

Agency Progress and Strategies to Meet Federal Sustainability Goals

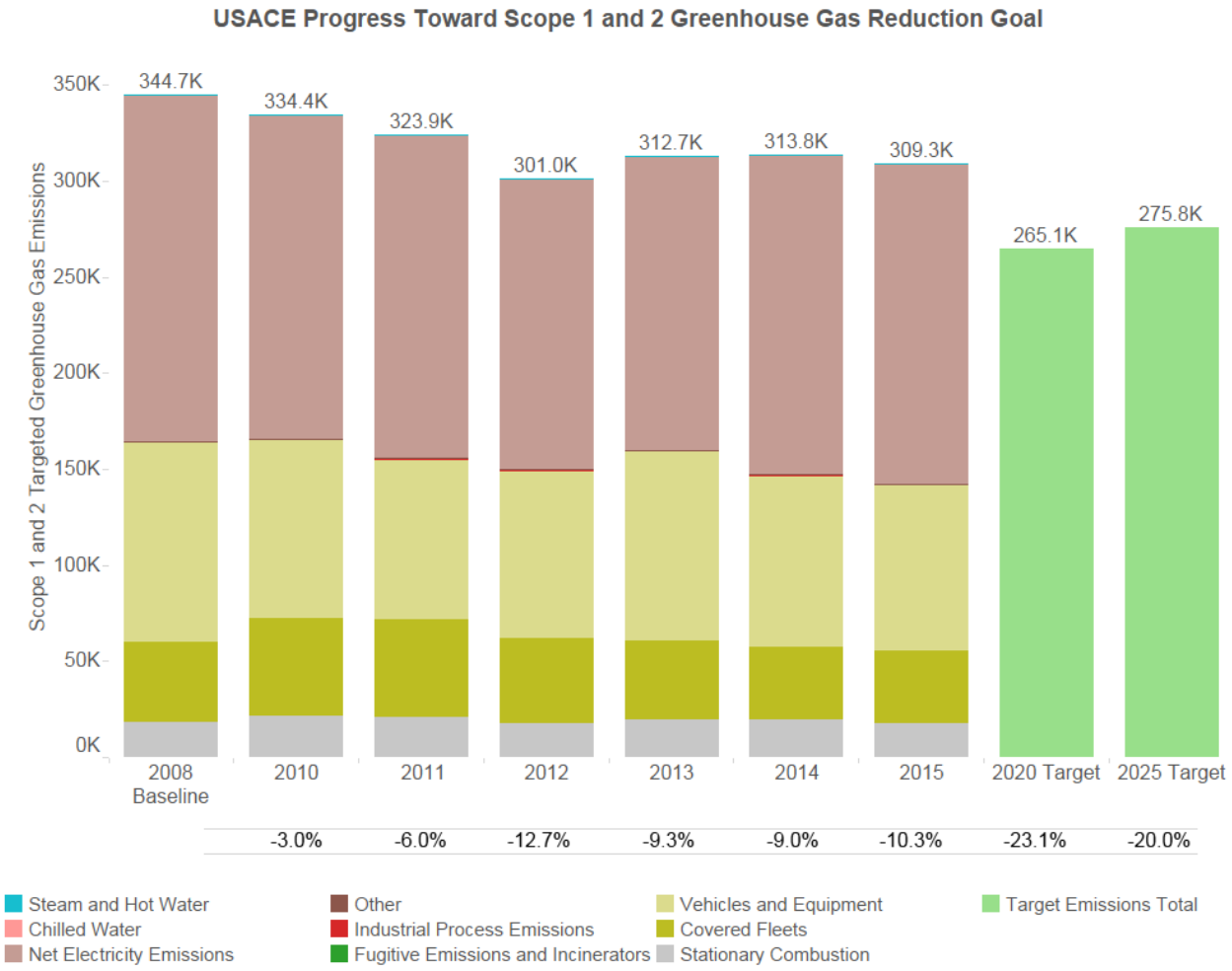
This section provides an overview of progress through FY 2015 on sustainability goals contained in E.O. 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, and agency strategies to meet the new and updated goals established by E.O. 13693, *Planning for Federal Sustainability in the Next Decade*.

Goal 1: Greenhouse Gas (GHG) Reduction

Scope 1 & 2 GHG Reduction Goal

E.O. 13693 requires each agency to establish a Scope 1 & 2 GHG emissions reduction target to be achieved by FY 2025 compared to a FY 2008 baseline. The USACE FY 2025 Scope 1 & 2 GHG target is 20 percent reduction from its FY 2008 baseline.

Chart: Progress Toward Scope 1 & 2 GHG Reduction Goal



Goal Overview

USACE, in coordination with OMB and CEQ, revised its GHG Scope 1 & 2 target from 23.1 percent by 2020 to percent to 20 percent by 2025 due primarily to mission expansion through 2015 and in

anticipation of continued mission expansion through 2025. USACE's target incorporates all E.O. 13693-mandated energy, petroleum, and clean/renewable energy goals, as well as voluntary reductions of Goal Excluded energy and vessel fleet petroleum consumption. USACE worked closely with Federal Energy Management Program (FEMP) staff to adapt the target-setting model "Developing Agency Reduction Targets 2" (DART2) to more closely align with USACE-specific energy consumption characteristics:

1. Fifty seven percent of USACE's total facility energy consumption is "goal-excluded," meaning that 57 percent of USACE facility energy is consumed in industrial processes or other non-building activities. The previous target overestimated USACE's GHG emissions reductions that would result from meeting the 25 percent mandated reduction in "goal-subject" energy intensity.
2. About 80 percent of the renewable electricity generated and consumed on-site at USACE facilities is incremental hydropower. Incremental hydropower does not displace purchased electricity and, therefore, does not reduce GHG emissions. The original target assumed that increases in renewable electricity would reduce GHG emissions; therefore, the previous target overestimated the GHG emissions reductions that would result from USACE meeting the mandated 30 percent renewable electricity goal.

USACE will continue to focus primarily on reducing facility energy usage, improving NTV fleet fuel efficiency, and increasing alternative fuel consumption, while also increasing acquisition and use of low/no-emission vehicles to reduce its Scope 1 & 2 GHG emissions. Development and implementation of MSC-level Sustainability Plans and Investment Strategies will help to guide USACE actions and improve performance. USACE is optimistic that it will have a potential "green" score for the first time on this goal by the end of FY 2016.

Scope 1 & 2 GHG Reduction Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Use the FEMP GHG emission report to identify/target high emission categories and implement specific actions to address high emission areas identified.	Yes	USACE will expand its pipeline of ESPCs/UESCs to encompass facilities that account for at least 50 percent of its FY 2015 GHG Scope 1 & 2 target-subject emissions.	(1) Implement 100 percent of the performance-based contracting milestones as tracked and reported by USACE in OMB MAX. (2) Implement 80 percent of energy conservation measures (ECM) as documented in the Compliance Tracking System (CTS).

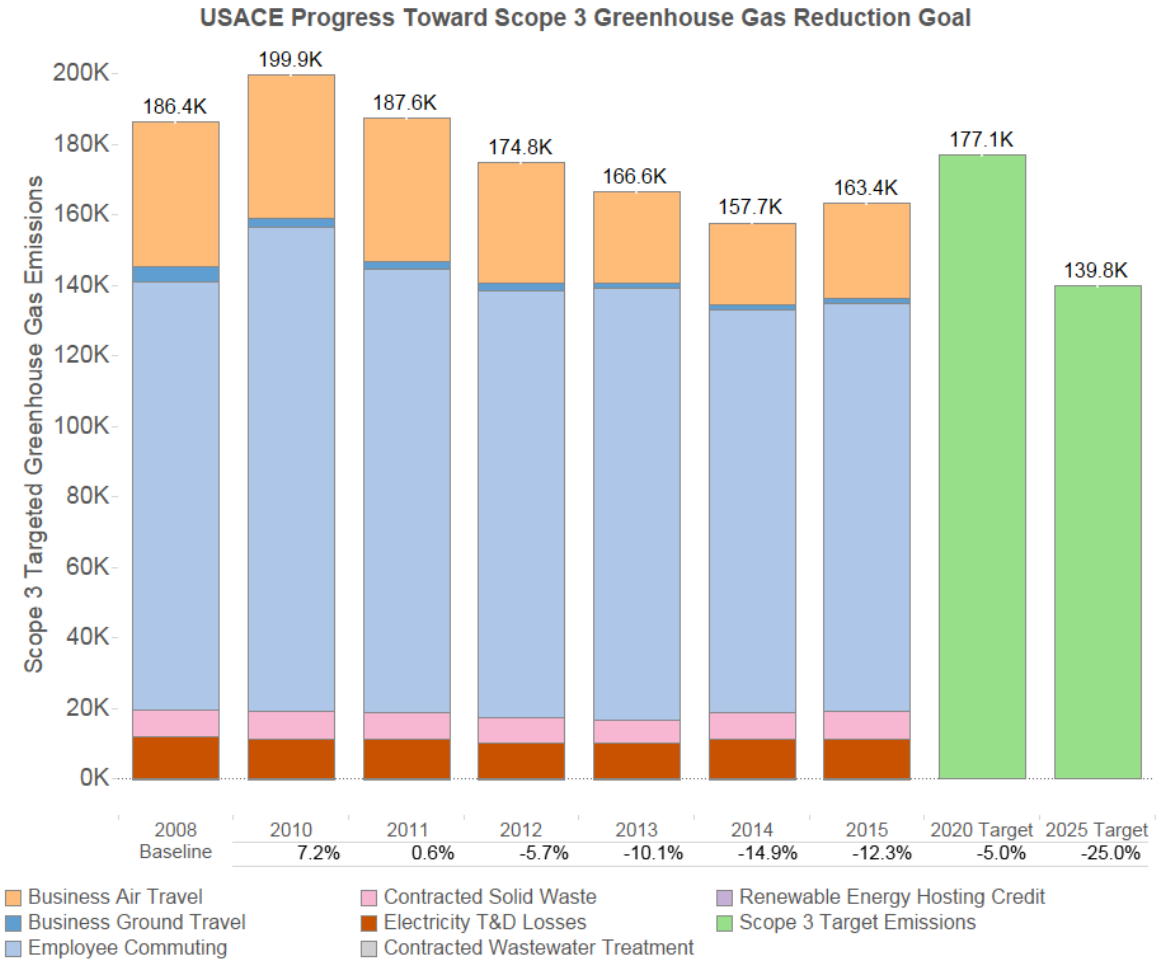
Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Identify and support management practices or training programs that encourage employee engagement in addressing GHG reduction.	Yes	In FY 2016/2017, USACE will execute six (6) course offerings of the USACE 2-day Sustainability/Energy course with 20-25 students per course offering. The course addresses nine (9) of the 10 E.O. 13693 Sustainability/Energy goals (Only Goal 10, Climate Change Resilience, is not addressed.)	Execute 100 percent (total of 6) of scheduled sustainability courses in FY 2016 and FY 2017.
Determine unsuccessful programs or measures to be discontinued to better allocate agency resources.	No	To date, USACE has not identified unsuccessful programs that it has the discretion to discontinue.	
Given agency performance to date, determine whether current agency GHG target should be revised to a more aggressive/ambitious target.	No	USACE, in coordination with OMB and CEQ, revised its GHG Scope 1 & 2 target from 23.1 percent by 2020 to 20 percent by 2025 due primarily to mission expansion through 2015 and in anticipation of continued mission expansion through 2025.	
Employ O&M best practices for emission generating and energy consuming equipment.	Yes	In FY 2015 and FY 2016, USACE executed preliminary surveys to support energy audits on two (2) vessels typical of the USACE fleet. In FY 2017, the USACE Marine Design Center will perform the energy audits on the two (2) vessels and evaluate the results of the energy audits to identify fleet wide opportunities for energy efficiency improvements. Additionally, two (2) more typical USACE fleet vessels will be surveyed and have energy audits performed.	Issue vessel fleet guidance for energy efficient operation and maintenance of USACE vessels based on the results of the USACE Marine Design Center audits by the end of FY 2018.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Identify additional sources of data or analysis with the potential to support GHG reduction goals.	Yes	In FY 2017, USACE will strive to improve the availability of GHG emissions data at the facility level by automating the incorporation of data from Federal fuel purchase tracking systems (e.g., Wright Express Card, Swipe SeaCard, and GSA Fuel Card) into the USACE sustainability and energy information management system (CRAFT).	Establish an automated data upload from Federal fueling transaction systems into CRAFT in time to support the FY 2017 GHG and Sustainability Data Report.

Scope 3 GHG Reduction Goal

E.O. 13693 requires each agency to establish a Scope 3 GHG emissions reduction target to be achieved by FY 2025 compared to a 2008 baseline. USACE's 2025 Scope 3 GHG reduction target is 25 percent from its FY 2008 baseline.

Chart: Progress Toward Scope 3 GHG Reduction Goal



Goal Overview

The USACE Scope 3 GHG emissions reduction goal is integrated into USACE mission activities through centrally-directed policies and procedures to reduce business travel and increase workplace flexibility through telework, alternative work schedules, and mass transit support and subsidies. The largest sources of Scope 3 GHG emissions for USACE are: employee commuting and business air travel.

USACE tracks Scope 3 GHG emissions reductions on an annual basis using the OMB Sustainability and Energy Scorecard. In 2016, USACE received a "green" for the OMB scorecard Scope 3 GHG reduction metric. USACE reduced Scope 3 GHG emissions by 12.3 percent in FY 2015 relative to its FY 2008 baseline and therefore, exceeded its 5 percent target. This reduction primarily resulted from reductions in TDY Travel. USACE faces a challenge in the upcoming years to maintain or further reduce its level of Scope 3 emissions, particularly avoiding additional increases in emissions associated with TDY travel. USACE reported a substantial increase in business travel emissions in FY 2015 relative to FY 2014 (i.e.,16 percent in air travel and 18 percent in ground travel), a trend that has the potential to negatively affect USACE's performance.

In FY 2017, USACE will focus primarily on conducting a new employee commuting survey to update data on employee commuting practices, identify opportunities for reducing Scope 3 commuting GHG emissions, and evaluate policy options. The Agency will continue to focus on expanding participation in authorized alternative work schedule and telework opportunities. USACE is currently conducting a Multimodal Access Plan (MAP) survey of USACE Sustainability points of contact to identify options currently available for teleworking. USACE will leverage results obtained from the MAP survey to inform FY 2017 MAP development.

Scope 3 GHG Reduction Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Reduce employee business ground travel.	No	Employee business ground travel accounted for less than 1 percent of USACE GHG Scope 3 emissions in FY 2015, and it is already an integral component of the broader USACE strategy for reducing TDY travel.	
Reduce employee business air travel.	Yes	Current Department of Defense (DoD), Army and USACE policies are focusing on reductions in TDY travel, which will result in proportional reductions of Scope 3 GHG emissions.	Reduce travel expenses by at least 30 percent as stated in OMB memo M-12-12 relative to FY 2010.
Develop and deploy an employee commuter emissions reduction plan.	No	USACE's priority is to first update the baseline for employee commuting GHG emissions, which USACE will accomplish by deploying an FY 2017 employee commuting survey.	
Use an employee commuting survey to identify opportunities and strategies for reducing commuter emissions.	Yes	USACE will execute an Employee Commuting survey every 2-3 years to identify opportunities and to establish or update strategies for reducing commuter emissions and to improve accounting for USACE Scope 3 GHG emissions.	Complete a new employee commuting survey by FY 2017, Q4.
Increase & track number of employees eligible for telework and/or the total number of days teleworked.	Yes	USACE will begin tracking the number of days teleworked using the USACE time keeping system.	Define telework baseline in FY 2017.

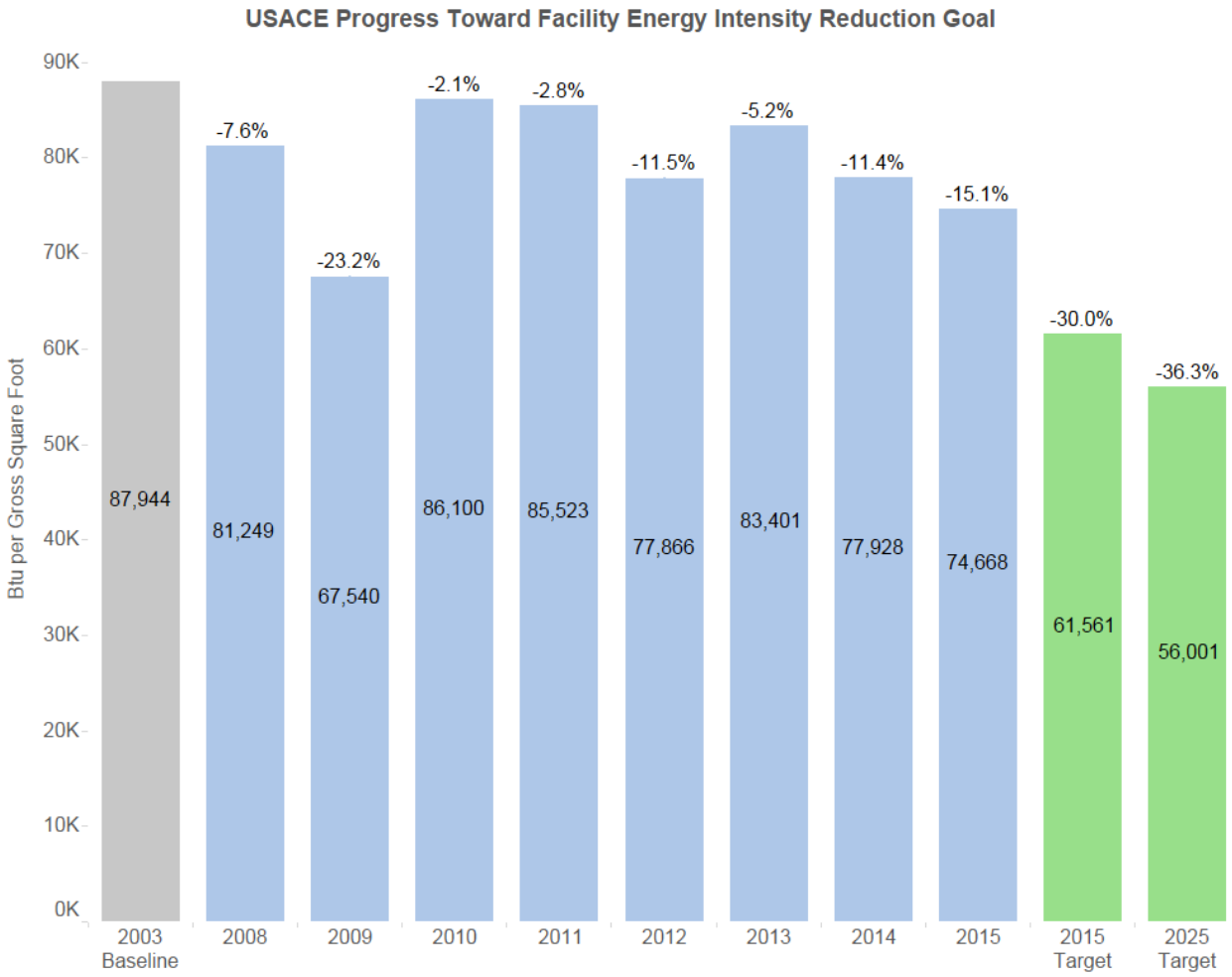
Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Develop and implement a program to support alternative/zero emissions commuting methods and provide necessary infrastructure.	Yes	USACE will develop and begin implementing the MAP by identifying, raising awareness of, and increasing leadership support for, sustainable commuting options for USACE employees.	(1) Complete the MAP survey by Q1, FY 2017. (2) Develop and submit FY 2017 MAP by Q3, FY 2017.
Establish policies and programs to facilitate workplace charging for employee electric vehicles.	Yes	In FY 2017, USACE will undertake an initiative to define options for charging employee vehicles in a manner consistent with federal law and DoD/Army policy. USACE policy/program will implement DoD/Army policy to the extent practicable at USACE owned and Civil Works facilities.	Adopt DoD/Army policy for workplace charging for employee electric vehicles to the extent practicable at USACE owned and Civil Works facilities in FY 2017.
Include requirements for building lessor disclosure of carbon emission or energy consumption data and report Scope 3 GHG emissions for leases over 10,000 rentable square feet.	Yes	USACE will incorporate a requirement for lessors to disclose energy consumption and carbon emissions data into all new agency lease solicitations for fully-serviced building leases over 10,000 rentable square feet (RSF). USACE will initiate energy reporting and GHG emissions reporting for fully-serviced building leases, beginning in FY 2016.	(1) Establish a complete inventory of newly solicited leases (over 10,000 RSF) by end of FY 2016. (2) Ensure that relevant energy consumption data is provided to USACE for use in the FY 2016 year-end report. (3) Demonstrate 100 percent conformance for leases greater than 10,000 RSF by the end of FY 2017.

Goal 2: Sustainable Buildings

Building Energy Conservation Goal

EISA requires each agency to reduce energy intensity 30 percent by FY 2015 as compared to FY 2003 baseline. Section 3(a) of E.O. 13693 requires agencies to promote building energy conservation, efficiency, and management and reduce building energy intensity by 2.5 percent annually through the end of FY 2025, relative to a FY 2015 baseline and taking into account agency progress to date, except where revised pursuant to Section 9(f) of E.O. 13693.

Chart: Progress Toward Facility Energy Intensity Reduction Goal



Goal Overview

At the end of FY 2015, USACE reported 15.1 percent progress on energy intensity reduction compared to the FY 2003 baseline, and a 3.7 percent energy reduction since FY 2014. Contributing to this reduction in FY 2015 was the Agency's continued focus on conventional ECM implementation such as lighting, heating ventilation and air conditioning (HVAC), simple controls, and building envelope upgrades. In FY 2016 and FY 2017, USACE will continue to track (on a quarterly basis) a set of "leading" metrics focused on execution of audits and implementation of energy and water conservation measures at the Agency's largest energy consuming facilities. These leading metrics are tracked at the Headquarters (HQ) and MSC levels using the energy data visualization capability provided by the USACE CRAFT/Tableau energy information management system. Tracking in this manner promotes facility-level understanding of energy and water consumption, and empowers facility managers to identify and prioritize performance improvement opportunities that can be included in future budget requests or energy performance contracting initiatives. In addition, USACE will continue to train and designate energy managers for all USACE covered facilities to ensure that energy information is used effectively in energy management decisions. As a complement to facility energy efficiency improvements, and in accordance with the 5-year USACE Metering Plan, USACE will build into relevant budgets the first increment of dedicated building-level meter installation funding.

Building Energy Conservation Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Make energy efficiency investments in agency buildings.	Yes	In FY 2017, USACE will continue investing appropriated and third party funds in building energy efficiency, emphasizing the use of energy performance contracting and investments at designated covered facilities.	(1) Demonstrate on-time execution of 100 percent of the energy performance contracting milestones as tracked and reported by USACE in OMB MAX in FY 2017. (2) Implement audit-identified, low and moderate cost ECMs at USACE covered facilities, as follows: 65 percent by the end of FY 2016, and 80 percent by the end of FY 2017. (3) Execute 100 percent of all Civil Works O&M funds budgeted for energy efficiency investments by FY 2017.
Use remote building energy performance assessment auditing technology	No	USACE currently has few buildings equipped with the technologies required to support remote energy performance assessments.	
Participate in demand management programs.	No	Although this is not a priority strategy, USACE is looking into options to incorporate demand-side management in its energy performance contracting and Commercial Utility Program initiatives.	
Incorporate Green Button data access system into reporting, data analytics, and automation processes.	No	Although this is not a priority strategy, USACE incorporated Green Button into its 5-Year Metering Plan and encourages its facilities to access and utilize Green Button data for energy management and reporting purposes.	

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Redesign interior space to reduce energy use through daylighting, space optimization, and sensors and control systems.	No	This strategy does not warrant priority consideration for USACE because of the general age and design of the majority of USACE buildings. Instead, USACE will continue to focus on conventional ECM implementation such as lighting, HVAC, simple controls, and building envelope.	
Identify opportunities to transition test-bed technologies to achieve energy reduction goals.	No	Due to resource constraints that will likely continue into the foreseeable future, USACE will focus on implementing life-cycle cost effective, tested and proven energy and water conserving technologies.	
Follow city energy performance benchmarking and reporting requirements.	No	This strategy is not applicable to the large number of USACE facilities that are located in rural areas, and is, therefore, not a priority strategy. However, where required by local law or regulation, USACE will conform to applicable city energy performance benchmarking and reporting requirements.	
Install and monitor energy meters and sub-meters.	Yes	In FY 2016 and FY 2017, USACE will build the first increment of dedicated building-level meter installation funding into relevant budgets, as described in the 5-year USACE Metering Plan.	Include budget packages for energy meter installation into the FY 2018 budget proposal for at least 1/3 of Civil Works O&M funded Appropriate Buildings in the USACE 5-year Metering Plan.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Collect and utilize building and facility energy use data to improve building energy management and performance.	Yes	In FY 2016 and FY 2017, USACE will continue to use the energy data visualization capability provided by the USACE CRAFT/Tableau energy information management system to inform decisions regarding energy efficiency investments in USACE buildings and facilities. USACE will continue to train and designate energy managers for all USACE covered facilities to ensure that energy information is used effectively in energy management decisions.	Utilize the most current full-year of facility energy consumption data, as documented in CRAFT/Tableau, as well as projected energy and O&M cost savings in 100 percent of Civil Works O&M funded budget packages by FY 2018.
Ensure that monthly performance data is entered into the EPA ENERGY STAR Portfolio Manager (ESPM).	Yes	In FY 2015, USACE completed installation of its first dedicated building-level advanced meters. In FY 2016 and FY 2017, USACE is positioned to begin benchmarking buildings in EPA ESPM.	Benchmark100 percent of Appropriate Buildings at covered facilities in ESPM where advanced meters are installed and operating (as identified in the USACE 5-year Metering Plan) by the end of FY 2017.

Building Efficiency, Performance, and Management Goal

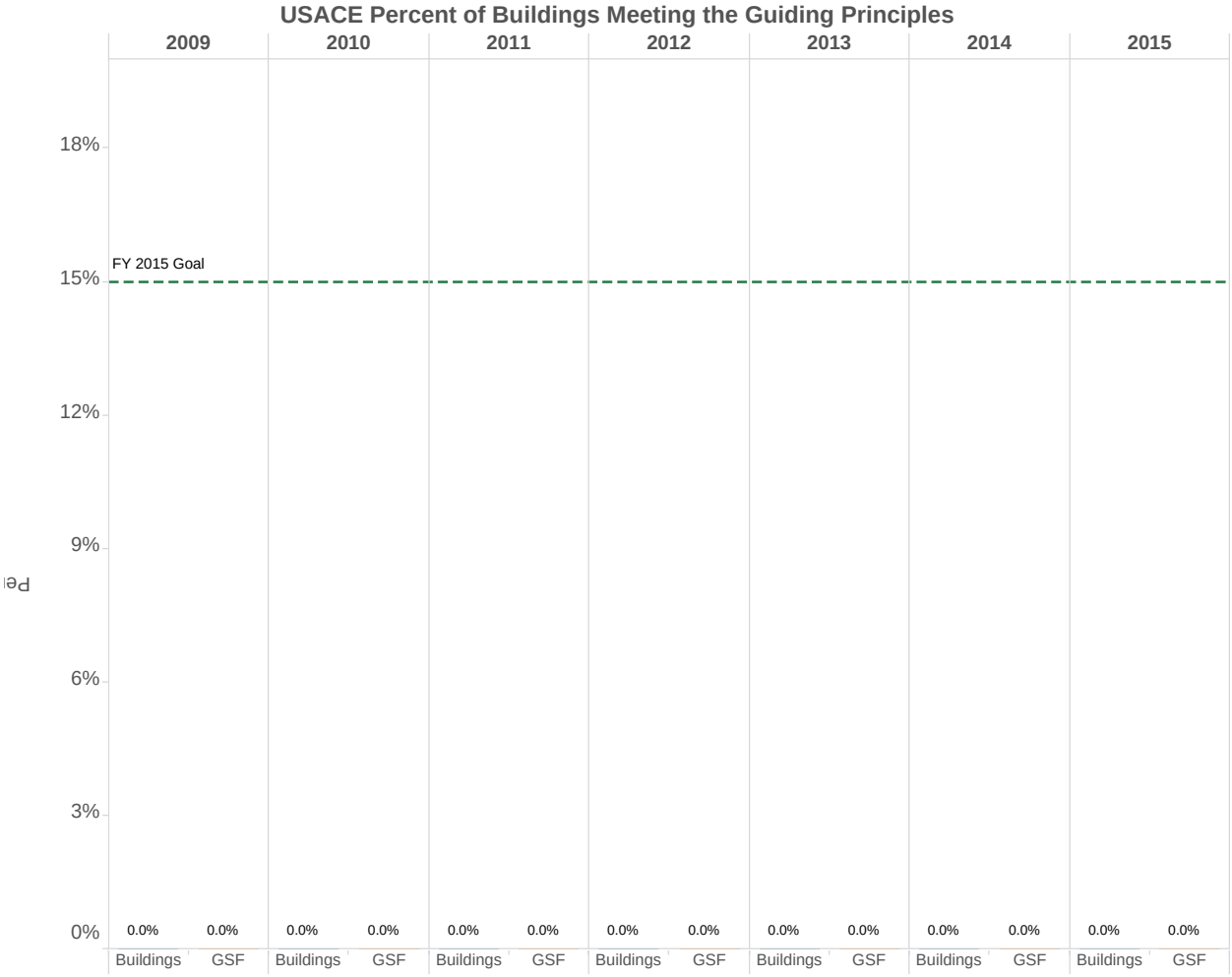
Section 3(h) of E.O. 13693 states that agencies will improve building efficiency, performance, and management and requires that agencies identify a percentage of the agency's existing buildings above 5,000 GSF intended to be energy, waste, or water net-zero buildings by FY 2025 and implementing actions that will allow those buildings to meet that target. USACE's 2025 target is to achieve 5% energy net-zero buildings.

Guiding Principles for Sustainable Federal Buildings

Section 3(h) of E.O. 13693 also states that agencies will identify a percentage, by number or total GSF, of existing buildings above 5,000 GSF that will comply with the *Guiding Principles for Sustainable Federal Buildings (Guiding Principles)* by FY 2025.

USACE's FY 2025 target is 15 percent of existing building square footage for buildings over 5,000 GSF comply with the revised Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (Guiding Principles) by FY 2025.

Chart: Percent of Buildings Meeting the Guiding Principles



Goal Overview

USACE views Sustainable Buildings as an inherently integrated goal, bringing together facility energy intensity, water intensity and Guiding Principles for High Performance and Sustainable Buildings goals. However, a continued challenge for USACE in meeting the Guiding Principles goal is resourcing the building improvements needed to achieve compliance. Manpower and funding for HPSB investments comes from the same resource pools that USACE is already utilizing to meet EISA Section 432 (covered facility) requirements, and facility energy, water and GHG emissions goals. In an effort to address this challenge USACE initiated an agency-wide "Assessment Challenge" in FY 2016 that is focused on consolidating a variety of overlapping sustainability and energy assessment requirements (e.g., HPSB and EISA 432). The purpose of this consolidation is to leverage resources and capabilities to streamline assessment execution, and to identify and prioritize sustainability and energy conservation measures. The assessment prioritization process for USACE facilities will consider all relevant federal requirements, but will emphasize potential for return on investment by focusing on buildings 5,000 GSF and greater, particularly at USACE covered facilities. In addition to the Assessment Challenge, USACE adopted UFC 1-200-02, Unified Facilities Criteria for High Performance and Sustainable Building Requirements in FY 2015 for USACE-Owned and Civil Works buildings. USACE will incorporate Green Building specifications into all new construction, modernization, and major renovation projects, in accordance with UFC 1-200-02 in FY 2017 and FY 2018.

Sustainable Buildings Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Include climate resilient design and management into the operation, repair, and renovation of existing agency buildings and the design of new buildings.	No	Although this is not a priority strategy, many USACE facilities already demonstrate climate resilient design to accommodate their mission function. For example, buildings that are located near designated flooding areas are equipped to handle controlled floods, as required.	
In planning new facilities or leases, include cost-effective strategies to optimize sustainable space utilization and consideration of existing community transportation planning and infrastructure, including access to public transit.	No	This strategy does not warrant priority consideration for USACE because a majority of facilities in districts and divisions are located in remote areas where access to public transit is limited. However, USACE will consider proximity to public transit in new leases where it is applicable and mission suitable.	
Ensure all new construction of Federal buildings greater than 5,000 GSF that enters the planning process by 2020 be designed to achieve energy net-zero and, where feasible, water or waste net-zero by FY 2030.	No	This strategy does not warrant priority consideration for USACE given the minimal number of new construction buildings entering the planning phase over the next two years. However, as new buildings are commissioned, USACE will work to incorporate energy net-zero and water or waste net-zero into design specifications, where feasible.	

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Include criteria for energy efficiency as a performance specification or source selection evaluation factor in all new agency lease solicitations over 10,000 RSF.	Yes	In FY 2017, USACE will incorporate relevant E.O. 13693 energy efficiency criteria as a performance specification or source selection evaluation factor in all new agency lease solicitations for fully-serviced building leases over 10,000 RSF. USACE is already taking steps to ensure that lease terms include a requirement for lessors to disclose GHG and/or energy consumption data.	Demonstrate 100 percent conformance for energy efficiency criteria inclusion in performance specifications and source selection evaluations for all new leases greater than 10,000 RSF by the end of FY 2017.
Incorporate green building specifications into all new construction, modernization, and major renovation projects.	Yes	In FY 2016 and FY 2017, USACE will incorporate Green Building specifications into all new construction, modernization, and major renovation projects, in accordance with UFC 1-200-02.	Incorporate 100 percent of relevant Green Building specifications into all new construction, modernization, and major renovation projects in order to meet the requirements of UFC 1-200-02 by the end of FY 2017.
Implement space utilization and optimization practices and policies.	Yes	In FY 2017, USACE will reduce administrative space across the Agency by: (1) consolidating areas to meet reduction standards; (2) co-locating with other federal agencies to reduce the footprint; (3) initiating work space studies with GSA; and (4) employing more teleworking and alternative work schedules to assist in reconfiguring the current space.	(1) Identify MSCs and Districts that are currently 'red' on the Administrative Space Utilization Report (ASUR) (as defined by exceeding the USACE administrative space requirement of 178 square foot per person (SF/PN)) and target them for "amber" (greater than 162 SF/PN, but less than 178 SF/PN) by FY 2018. (2) Work with GSA to implement consolidation, co-location, and reconfiguration options for USACE space requirements by FY 2018.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Implement programs on occupant health and well-being in accordance with the *Guiding Principles.*	Yes	In FY 2017, USACE will continue to encourage occupant health and well-being practices in accordance with the updated HPSB Guiding Principles as captured in UFC 1-200-02, including materials selection, daylighting, increasing stairwell access, and increasing access to commuter showers, fitness centers, and bike parking.	Incorporate 100 percent of requirements for building design and renovation/repair that address attributes relevant to employee health and well-being to meet the requirements of UFC 1-200-02 and the updated HPSB Guiding Principles by the end of FY 2017.

Goal 3: Clean & Renewable Energy

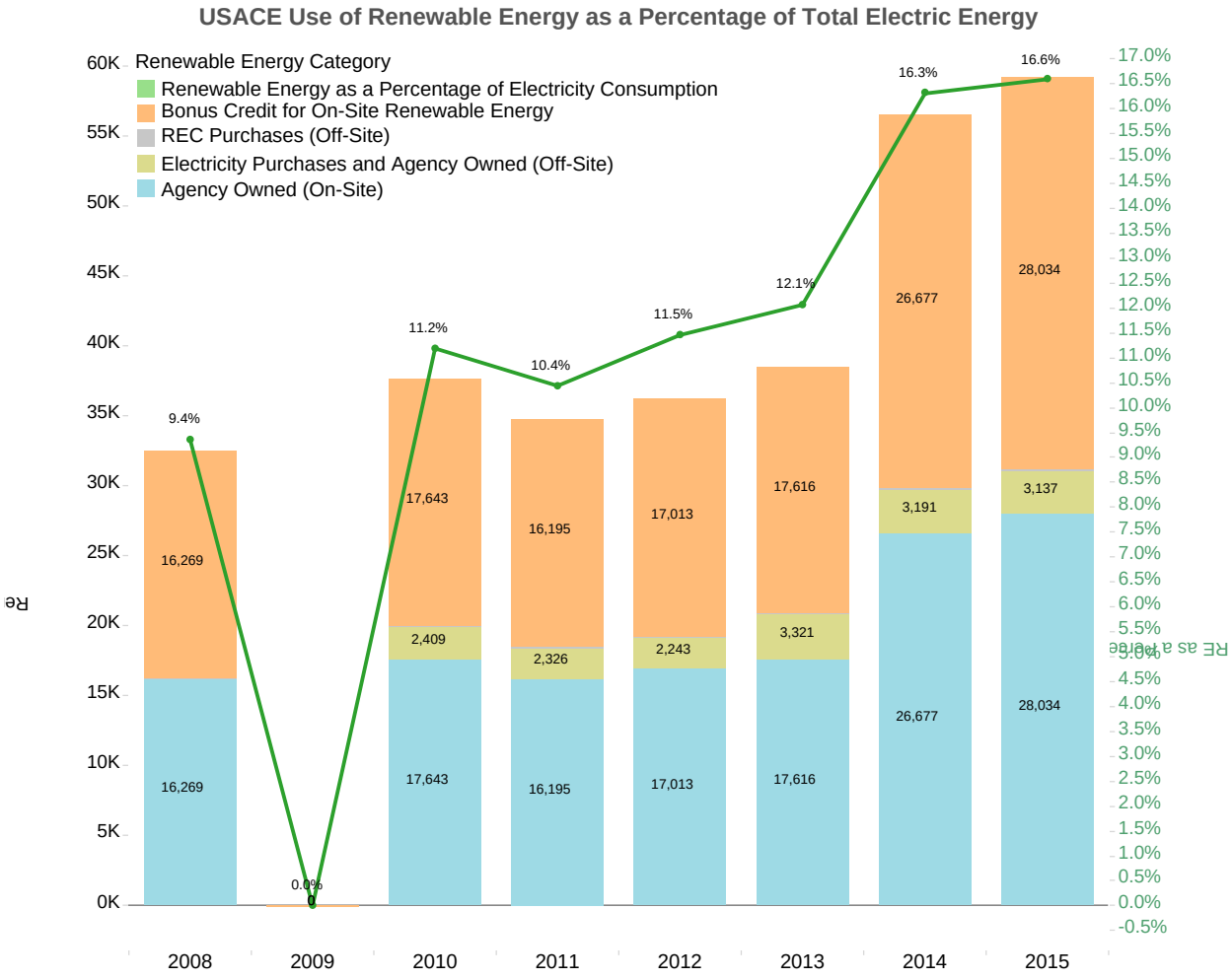
Clean Energy Goal

E.O. 13693 Section 3(b) requires that, at a minimum, the percentage of an agency's total electric and thermal energy accounted for by renewable and alternative energy shall be not less than: 10 percent in FY 2016 - 2017; 13 percent in FY 2018 - 2019; 16 percent in FY 2020 - 2021; 20 percent in FY 2022 - 2023; and 25 percent by FY 2025.

Renewable Electric Energy Goal

E.O. 13693 Section 3(c) requires that renewable energy account for not less than 10 percent of total electric energy consumed by an agency in FY 2016 - 2017; 15 percent in FY 2018 - 2019; 20 percent in FY 2020 - 2021; 25 percent in FY 2022 - 2023; and 30 percent by 2025.

Chart: Use of Renewable Energy as a Percentage of Total Electric Energy



Goal Overview

USACE's renewable energy accounted for 16.6 percent of total electric energy consumed by the Agency in FY 2015, which exceeded the goal established by E.O. 13514 of 10 percent renewable electricity by

the end of FY 2015. The success primarily resulted from USACE's long-term, systematic investments in modernization of USACE hydropower generation capabilities to increase capacities and efficiencies and, therefore, generation of incremental hydropower[4]. In FY 2015, USACE reported 10 hydropower facilities that generate and consume incremental hydropower on-site. These 10 facilities accounted for nearly 27,000 MWH of renewable electricity in FY 2015.

USACE will continue its multi-faceted approach involving the Federal Energy Regulatory Commission (FERC), existing and prospective FERC licenses, and the USACE Hydropower Modernization Initiative (HMI) to increase its generation and consumption of renewable energy toward the E.O. 13693 goal of 30 percent renewable electricity FY 2025. As part of the HMI, USACE is systematically targeting and rehabilitating selected generating units at its hydropower facilities to increase reliability and availability of generating units.

In FY 2016 - 2017, USACE will focus on conducting engineering analysis and other assessments to inform planning and more effectively leverage new and existing incremental hydropower to improve performance on energy intensity and GHG emissions.

One of the key systemic challenges USACE faces is making O&M investments in hydropower infrastructure as a means to achieve the federal goal – i.e., solely for the benefit of the facility and USACE. In general, the O&M costs for improvements in hydropower generating capabilities at USACE hydropower dams are passed on to the customers. Passing hydropower investment costs to customers for investments that do not benefit customers directly is problematic. Another challenge is the learning curve and investment of time required to enter into a power purchase agreement (PPA). USACE is actively pursuing its first Civil Works PPA at a covered facility in the USACE NAD. USACE expects to issue the RFP during FY 2017-2018. If viable, the PPA will provide approximately 1 MW of solar photovoltaic capacity.

Clean and Renewable Energy Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Include in DoD accounting, fulfillment of the requirements of DoD goals under section 2852 of the National Defense Authorization Act (NDAA) of 2007.	No	USACE will strive to achieve the 30% renewable energy goal established by EO13693, and in so doing USACE will also meet the renewable electric energy goal established in NDAA of 2007, Section 2852.	

[4] Incremental hydropower is the portion of hydropower that is considered renewable energy in accordance with Federal definitions because it results from actions taken since January 1999 to improve the capacity or efficiency of hydropower generation units.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Install agency-funded renewable on-site and retain corresponding renewable energy certificates (RECs).	Yes	USACE will continue to use the Civil Works O&M budget process and alternative financing tools to enable individual USACE facilities to identify (e.g., through energy audits) and implement life-cycle cost effective renewable energy systems (e.g., wind / solar) to generate energy for use on-site.	Execute 100 percent of Civil Works O&M funds programmed for renewable energy ECMs in FY 2016 – FY 2017.
Contract for the purchase of energy that includes installation of renewable energy on or off-site and retain RECs or obtain replacement RECs.	Yes	USACE is actively pursuing its first Civil Works PPA, at a covered facility in the USACE NAD. USACE expects to issue an RFP for this PPA during FY 2017-2018.	Issue NAD PPA RFP in FY 2017-2018, if it is determined to be viable.
Purchase electricity and corresponding RECs or obtain equal value replacement RECs.	No	USACE's primary renewable energy strategies include incremental hydropower and photovoltaic/PPAs. However, USACE facilities have discretion to take action at a local level to contract for purchase of renewable electricity and corresponding RECs when supported by life cycle cost analysis of renewable energy alternatives.	

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Purchase RECs to supplement installations and purchases of renewable energy, when needed to achieve renewable goals.	No	USACE follows Army policy, which states that RECs will not be purchased solely for the purpose of meeting a sustainability goal. Facilities have discretion to take action at a local level to contract for purchase of renewable electricity and corresponding RECs when supported by life cycle cost analysis of renewable energy alternatives.	
Install on-site thermal renewable energy and retain corresponding renewable attributes or obtain equal value replacement RECs.	Yes	USACE will continue efforts to use the Civil Works O&M budget process and alternative financing tools to enable individual USACE facilities to identify (e.g., through energy audits and similar types of assessments) and implement life-cycle cost effective thermal renewable energy (e.g., solar water heaters, ground source heat pumps, and wood pellet stove) systems to generate energy for use on-site.	Execute 100 percent of CW O&M funds programmed for renewable energy ECMs in FY 2016 – FY 2017.
Install on-site combined heat and power (CHP) processes.	No	CHP is not practical for USACE facilities because the only energy generated on-site is hydropower.	

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Identify opportunities to install on-site fuel cell energy systems.	Yes	USACE will continue efforts to use the Civil Works O&M budget process and alternative financing tools to enable individual USACE facilities to identify (e.g., through energy audits and similar types of assessments) and implement life-cycle cost effective alternative energy systems such as fuel cell systems to generate energy for use on-site.	Include proven alternative and renewable energy technologies within the scope of ECMs in 100 percent of USACE energy audits in FY 2016 – FY 2017.
Identify opportunities to utilize energy that includes the active capture and storage of carbon dioxide emissions associated with energy generation.	No	USACE prefers to focus clean and renewable energy investments on on-site generation and consumption, emphasizing incremental hydropower and photovoltaics.	
Identify opportunities to increase hydropower	Yes	USACE will leverage the HMI to increase the on-site generation and consumption of incremental hydropower. The purpose of the USACE HMI is to rehabilitate hydropower units to improve reliability and availability of hydropower generation capability at existing dams.	In FY 2017, complete an engineering modeling analysis of the capacity increases and efficiency improvements expected to result from implementation of the HMI through FY 2025.
Identify and analyze opportunities to install or contract for energy installed on current or formerly contaminated lands, landfills, and mine sites.	No	The USACE primary renewable energy strategies include incremental hydropower and photovoltaic/PPAs.	

Goal 4: Water Use Efficiency & Management

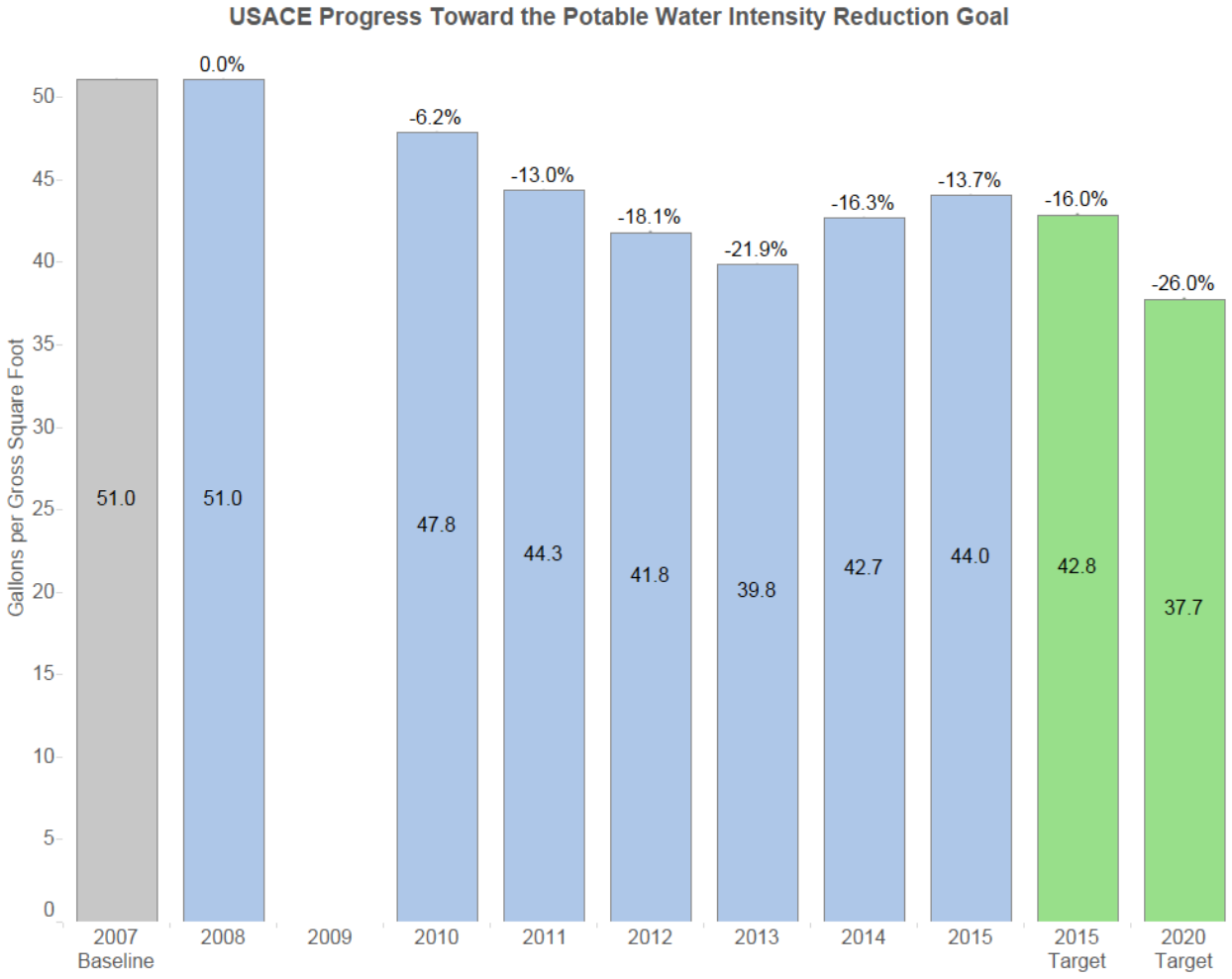
Potable Water Consumption Intensity Goal

E.O. 13693 Section 3(f) states that agencies must improve water use efficiency and management, including stormwater management, and requires agencies to reduce potable water consumption intensity, measured in gallons per square foot, by 2 percent annually through FY 2025 relative to an FY 2007 baseline. A 36 percent reduction is required by FY 2025.

Industrial, Landscaping and Agricultural (ILA) Water Goal

E.O. 13693 section 3(f) also requires that agencies reduce industrial, landscaping and agricultural (ILA) water consumption, measured in gallons, by 2 percent annually through FY 2025 relative to a FY 2010 baseline.

Chart: Progress Toward the Potable Water Intensity Reduction Goal



Goal Overview

USACE is committed to achieving the water-use efficiency and management goals set forth by E.O. 13693 to enhance the agency's mission support, conserve water resources, and minimize the impacts of

USACE facilities and operations. The USACE Campaign Plan (UCP) includes Water Use Efficiency and Management as one of the top four goals.

In 2016, USACE received a score of red for the OMB Sustainability Scorecard Potable Water Intensity metric. USACE's reduction in potable water intensity compared to 2007 was 13.7 percent (less than the 16 percent reduction target), and therefore not on track for 26 percent reduction by 2020. USACE will continue to track internally, on a quarterly basis, a set of "leading" metrics focused on execution of audits and implementation of water conservation measures at USACE's largest facilities. These metrics are tracked at the HQ and MSC levels, and they are designed to drive actions facilities need to be taking to improve performance on the potable water intensity goal.

In FY 2016 and beyond, reducing water consumption is a top priority for USACE. The Agency will continue its budget emphasis on water line replacement, focusing specifically on facilities with a documented history of recurring water line breaks and repairs. The FY 2017 Sustainability budget includes 28 projects to replace aging water supply lines that are currently failing and causing water leaks. Implementation of these projects is estimated to reduce potable water use by approximately 25 million gallons annually.

In FY 2016 and FY 2017, USACE will also identify its highest water consuming Civil Works facilities, many of which are likely to be USACE owned and operated campgrounds. USACE will target selected high water consuming (greater than about 3 million gallons annually) facilities for installation of campground-dedicated water meters, as well as visitor education campaigns to encourage responsible water and energy conservation at campground facilities as part of the USACE Sustainable Recreation Initiative.

Water Use Efficiency & Management Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Install green infrastructure features to assist with storm and wastewater management.	Yes	USACE will implement applicable E.O. 13693 green infrastructure and stormwater best practices on Federal construction projects in accordance with EISA Sec 438 guidance. USACE will ensure compliance by implementing applicable sustainable locations and site development requirements as described in UFC 1-200-02.	Design/construct 100 percent of applicable projects to meet EISA 438, as documented in UFC 1-200-02.
Install and monitor water meters and utilize data to advance water conservation and management.	Yes	USACE will continue to install and monitor water meters as an essential part of water conservation efforts.	Plan, program and budget for installation of water meters at the largest USACE owned and operated campgrounds in FY 2016/2017 and target implementation for FY 2018 and FY 2019.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Install high efficiency technologies, e.g. WaterSense fixtures.	Yes	USACE will continue implementing all lifecycle cost effective ECMs (such as high efficiency water technologies) reported in CTS. ECM implementation will leverage alternative financing where economically viable, and it will be phased-in to accommodate the timing and duration of the USACE budget cycle for direct capital investments.	Implement audit-identified, low and moderate cost ECMs at USACE covered facilities, including high efficiency water technologies, as follows: 65 percent by the end of FY 2016, and 80 percent by the end of FY 2017.
Prepare and implement a water asset management plan to maintain desired level of service at lowest life cycle cost.	No	USACE is approaching asset management holistically by looking at all USACE assets with a focus first on critical assets -- such as locks and dams. Water treatment and distribution infrastructure will be incorporated into USACE asset management as the program schedule dictates.	
Minimize outdoor potable water use and use alternative water sources as much as possible.	Yes	USACE will implement applicable sustainable locations and outdoor/landscape water conservation site development requirements as described in UFC 1-200-02, where life cycle cost effective.	Meet 100 percent of UFC 1-200-02 potable water conservation requirements at projects subject to the UFC, when life cycle cost effective in FY 2016-2017.
Design and deploy water closed-loop, capture, recharge, and/or reclamation systems.	No	While this is not a priority strategy, USACE will implement applicable indoor water conservation measures as described in UFC 1-200-02, where life cycle cost effective.	

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Install meters to measure and monitor potable water consumption at locations where advanced electric utility meters have been installed.	Yes	With a few noteworthy exceptions, the largest potable water consumers among USACE facilities are typically USACE owned and operated campgrounds. In FY 2016, USACE will initiate a program to identify the largest water consuming campgrounds and will plan, program and budget for the installation of dedicated water meters. Although the water meters will not be advanced, they will enable USACE to more quickly identify and repair water line breaks, and to identify unauthorized uses of water.	(1) Identify the USACE Civil Works facilities with the largest annual water consumption in FY 2016. (2) Plan, program and budget for dedicated water meter installation at the identified facilities in FY 2017.
Develop and implement programs to educate employees and visitors about methods to minimize water use.	Yes	The USACE Sustainability Course includes a module on water use efficiency and management. In addition, USACE will expand its current Sustainable Recreation Initiative to focus on water as well as energy.	(1) Execute 100 percent (total of 6) of scheduled sustainability courses in FY 2016 and FY 2017. (2) Update visitor communication tools to increase emphasis on water conservation in FY 2017.
Assess the interconnections and dependencies of energy and water on agency operations, particularly climate change's effects on water which may impact energy use.	No	While this is not a priority strategy, as a water resources management agency, USACE has unique opportunities to adapt operations (in close coordination with stakeholders) to prepare for and mitigate the effects of climate change on water which may impact energy use. (See Goal 10, Climate Change Resilience.)	

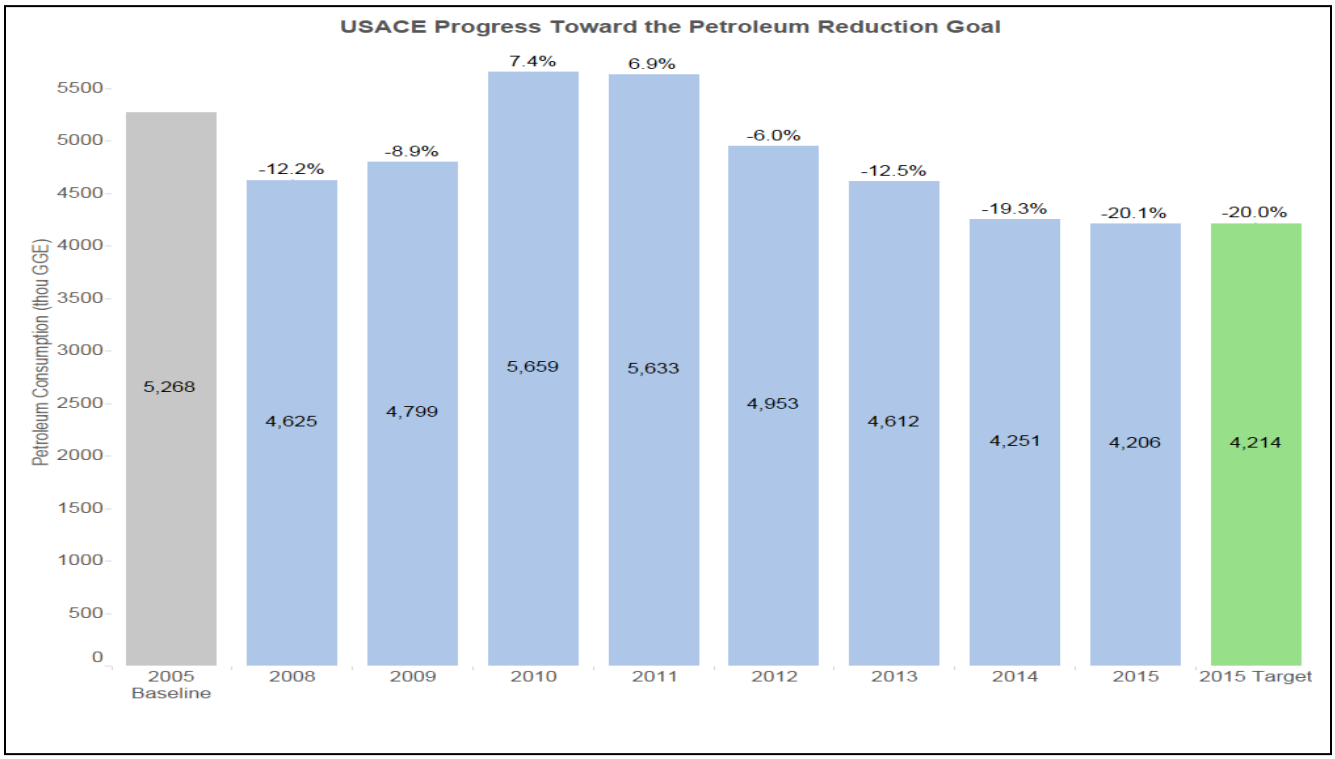
Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Consistent with State law, maximize use of grey-water and water reuse systems that reduce potable and ILA water consumption.	No	While this is not a priority strategy, USACE will implement applicable indoor/outdoor water conservation measures as described in UFC 1-200-02, where life cycle cost effective.	
Consistent with State law, identify opportunities for aquifer storage and recovery to ensure consistent water supply availability.	No	While this is not a priority strategy, USACE will implement applicable indoor/outdoor water conservation measures.	
Ensure that planned energy efficiency improvements consider associated opportunities for water conservation.	No	USACE has very few buildings where significant energy consuming equipment is also utilizing water, such as boilers and chillers.	
Where appropriate, identify and implement regional and local drought management and preparedness strategies that reduce agency water consumption	No	While this is not a priority strategy, as a water resources management agency, USACE has unique opportunities to adapt operations, in close coordination with stakeholders, and in accordance with the requirements of facility specific water management plans. (See Goal 10, Climate Change)	

Goal 5: Fleet Management

Fleet Petroleum Use Reduction Goal

E.O. 13514 and EISA required that by FY 2015 agencies reduce fleet petroleum use by 20 percent compared to a FY 2005 baseline.

Chart: Progress Toward the Petroleum Reduction Goal



Fleet Alternative Fuel Consumption Goal

Agencies should have exceeded an alternative fuel use that is at least 5 percent of total fuel use. In addition, E.O. 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, required that agencies increase total alternative fuel consumption by 10 percent annually from the prior year starting in FY 2005. By FY 2015, agencies must have increased alternative fuel use by 159.4 percent, relative to FY 2005.

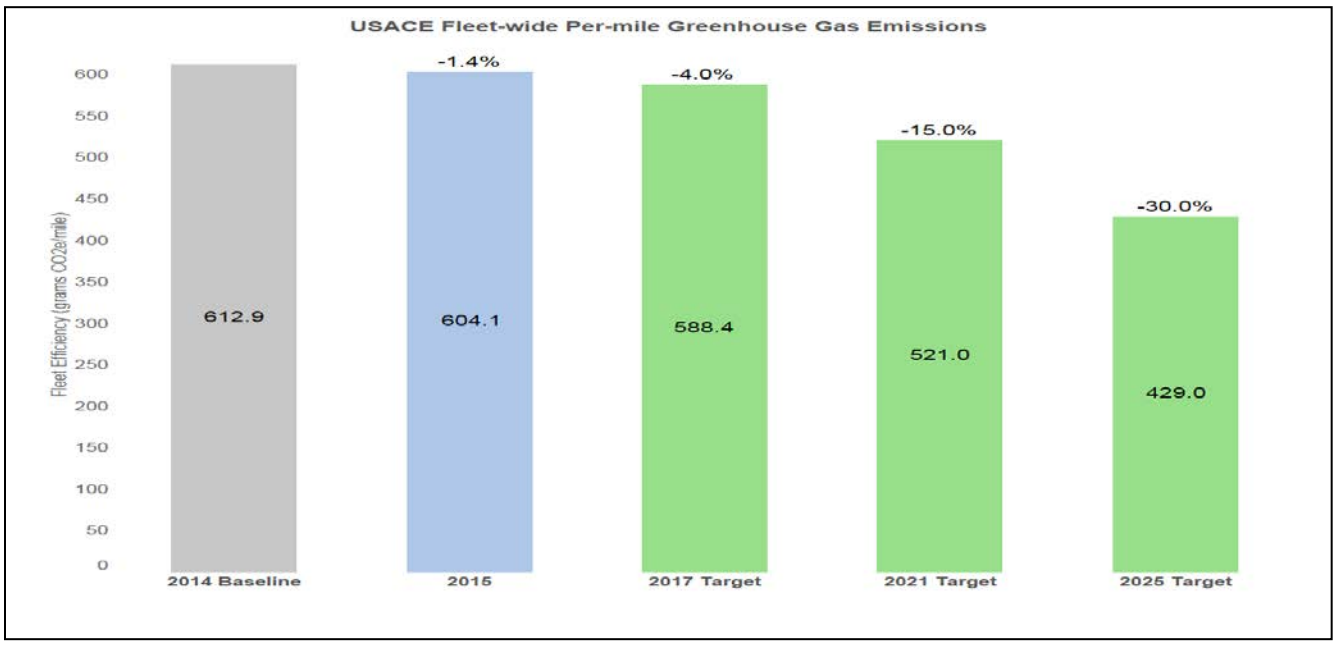
In FY 2015, USACE use of alternative fuel equaled 1.6 percent of total fuel use. USACE has increased its alternative fuel use by 1,151 percent since FY 2005.

Fleet Per-Mile Greenhouse Gas (GHG) Emissions Goal

E.O. 13693 Section 3(g) states that agencies with a fleet of at least 20 motor vehicles will improve fleet and vehicle efficiency and management. E.O. 13693 section 3(g)(ii) requires agencies to reduce fleet-wide per-mile GHG emissions from agency fleet vehicles relative to a FY 2014 baseline and sets new goals for percentage reductions: not less than 4 percent by FY 2017; not less than 15 percent by FY 2020; and not less than 30 percent by FY 2025.

E.O. 13693 Section 3(g)(i) requires that agencies determine the optimum fleet inventory, emphasizing eliminating unnecessary or non-essential vehicles. The Fleet Management Plan is included as an appendix to this plan.

Chart: Fleet-wide Per-mile GHG Emissions



Goal Overview

USACE reduced overall NTV fleet petroleum fuel consumption by 20.1 percent (FY 2005 baseline) through FY 2015, exceeding the target goal set by E.O. 13514. The reduction in petroleum consumption was realized largely through a reduction in fleet size, an increase in the number of AFVs in the NTV fleet, and an increase in the consumption of AF.

In FY 2015, USACE increased its AF consumption by more than 100 percent from the previous fiscal year. This represents a substantial improvement from prior years and considerable progress toward the OMB Sustainability and Energy Scorecard goal of 5 percent AF consumption relative to total fuel consumption. The commitment and support of the USACE Command and agency stakeholders has played a critical role in the ability of the agency to meet these goals.

USACE strives to transform its fleet into a smaller, more fuel efficient, and lower GHG emitting NTV fleet. Its unique mission, however, continues to pose challenges in the acquisition of vehicles that satisfy mission requirements. Challenges include the ability of the Agency to procure larger, heavier duty vehicles in an alternative fuel configuration. Other continuing challenges include the accessibility of funding for the development of electric vehicle (EV)/zero emissions vehicle (ZEV) charging station infrastructure, as well as the lack of AF stations in a many geographic locations where USACE operates. USACE is currently working to develop an agency wide plan to install appropriate charging or refueling infrastructure for zero emission or plug-in hybrid vehicles. This plan will ensure that, once acquired, EVs/ZEVs will be utilized to the fullest extent possible. USACE also faces a challenge in changing the agency culture and the habits of NTV operators. USACE will continue to partner with agency stakeholders to educate vehicle operators on the importance of AF use in AFVs.

Fleet Management Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Collect and utilize agency fleet operational data through deployment of vehicle telematics.	No	E.O. 13693 calls for the use of telematics on all newly acquired vehicles as of March 2017. USACE is working to implement a robust telematics program for FY 2018.	
Ensure that agency annual asset-level fleet data is properly and accurately accounted for in a formal Fleet Management Information System (FMIS) as well as submitted to the Federal Automotive Statistical Tool (FAST) reporting database, the Federal Motor Vehicle Registration System, and the Fleet Sustainability Dashboard (FLEETDASH) system.	No	USACE currently utilizes FMIS to capture asset level data for submission to FAST and FLEETDASH. Submission of asset level data to FAST will begin in FY 2018.	
Increase acquisitions of zero emission and plug-in hybrid vehicles.	Yes	The FY 2018 budget will be the first opportunity to fund plug-in electric charging infrastructure through the routine budget process. USACE will coordinate the acquisition of zero emission and plug-in hybrid vehicles with the FY 2018 acquisition and installation of charging infrastructure.	(1) Execute plug-in electric NTV pilots at two Civil Works facilities in FY 2016 and FY 2017. (2) Incorporate in the FY 2018 Civil Works budget all recommended plug-in electric vehicle charging station investments as requested by the USACE MSCs.
Issue agency policy and a plan to install appropriate charging or refueling infrastructure for zero emission or plug-in hybrid vehicles.	Yes	In FY 2017, USACE will issue an agency-wide plan to install appropriate charging infrastructure for zero emission or plug-in hybrid vehicles. This plan will ensure that EVs/ZEVs will be utilized to the fullest extent possible once acquired. Consider funding for EV/ZEV infrastructure in 2018 Budget development.	(1) Issue agency plan to install appropriate charging or refueling infrastructure for zero emission or plug-in hybrid vehicles in FY 2017. (2) Identify locations for the installation of the EV/ZEV charging stations in FY 2018. (3) Consider funding for EV/ZEV infrastructure in 2018 Budget development.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Optimize and right-size fleet composition, by reducing vehicle size, eliminating underutilized vehicles, and acquiring and locating vehicles to match local fuel infrastructure.	No	Absent updated (FY 2016) VAM guidance from GSA, USACE will focus its FY 2016 VAM effort on updating the fleet baseline in preparation for right-sizing the fleet in FY 2017 and beyond, as referenced in this strategy.	
Increase utilization of alternative fuel in dual-fuel vehicles.	Yes	USACE will partner with agency stakeholders to educate vehicle operators on the importance of AF use in AFVs, increase AF use through the reduction of AF missed opportunities, and provide guidance and support during the acquisition cycle to ensure low GHG and AF vehicles are procured and placed in appropriate locations to maximize utility. USACE-IT will provide the Department of Energy (DoE) Alternative Fueling Station Locator application on agency Blackberries.	(1) Reduce AF missed opportunities by 50 percent per year from a FY 2015 baseline for FY 2016 - 2017. (2) Increase overall AF consumption to ≥ 5 percent of total fuel consumption.
Use a FMIS to track real-time fuel consumption throughout the year for agency-owned, GSA-leased, and commercially-leased vehicles.	Yes	In FY 2017, USACE will continue to use FMIS, including GSA DriveThru, FedFMS, and FLEETDASH to track and review NTV fleet fuel consumption, including AF consumption.	(1) Reduce AF missed opportunities by 50 percent per year from a FY 2015 baseline for FY 2016 - 2017. (2) Increase overall AF consumption to ≥ 5 percent of total fuel consumption.
Implement vehicle idle mitigation technologies.	No	Strategy to be addressed with the implementation of telematics in FY 2018.	
Minimize use of law enforcement exemptions by implementing GSA Bulletin Federal Management Regulation (FMR) B-33, *Motor Vehicle Management, Alternative Fuel Vehicle Guidance for Law Enforcement and Emergency Vehicle Fleets.*	N/A	USACE NTV fleet does not include Law Enforcement vehicles.	

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Where State vehicle or fleet technology or fueling infrastructure policies are in place, meet minimum requirements.	No	USACE is currently working on the development of AFV fueling infrastructure policies as outlined above.	
Establish policy/plan to reduce miles traveled, e.g. through vehicle sharing, improving routing with telematics, eliminating trips, improving scheduling, and using shuttles, etc.	No	In FY 2017, USACE will focus on Scope 1 GHG emissions reduction by improving overall fleet fuel efficiency.	

Goal 6: Sustainable Acquisition

Sustainable Acquisition Goal

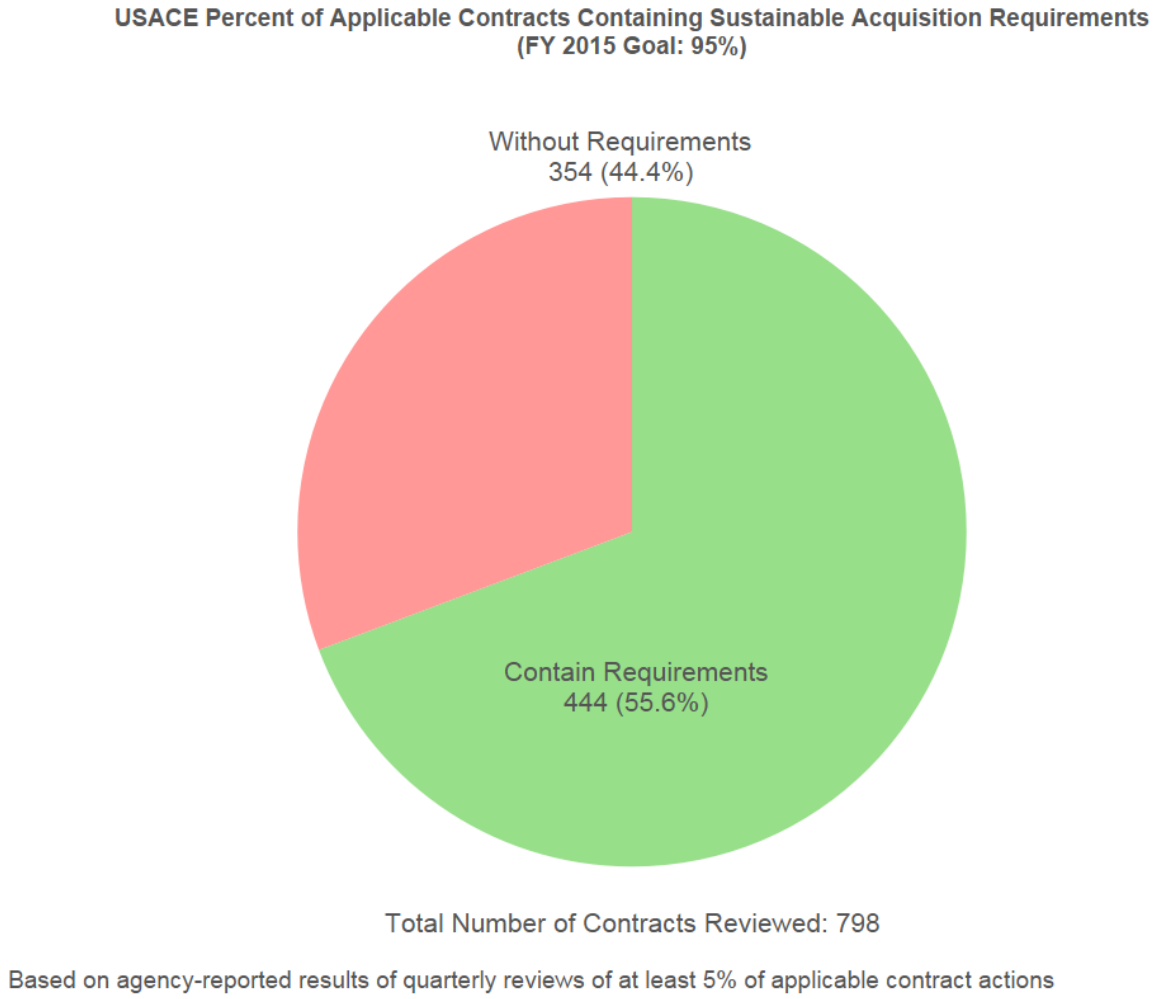
E.O. 13693 section 3(i) requires agencies to promote sustainable acquisition by ensuring that environmental performance and sustainability factors are considered to the maximum extent practicable for all applicable procurements in the planning, award and execution phases of acquisition.

Biobased Purchasing Targets

The Agricultural Act of 2014 requires that agencies establish a targeted biobased-only procurement requirement. E.O. 13693 section 3(iv) requires agencies to establish an annual target for increasing the number of contracts to be awarded with BioPreferred and biobased criteria and the dollar value of BioPreferred and biobased products to be delivered and reported under those contracts in the following fiscal year.

For FY 2017, USACE has established a target of 1000 contracts and $64,916,000 in products to be delivered.

Chart: Percent of Applicable Contracts Containing Sustainable Acquisition Requirements



Goal Overview

USACE utilizes FPDS and Army Contracting Business Intelligence System (ACBIS) to conduct quarterly assessments of the percent of applicable contracts that include the sustainability clauses required by the Federal Acquisition Regulation (FAR), including preference for recycled content products, ENERGY STAR qualified and FEMP-designated products, and Biopreferred and biobased products designated by the U.S. Department of Agriculture (USDA). Of the total number of applicable new contract actions in FY 2015, Q3 (2,173) and FY 2015, Q4 (4,944), 69 percent complied with Federal sustainable acquisition requirements. Only one USACE Division, Humphries Engineering Center, received a green rating on the metric. In FY 2015, USACE refined its sustainable acquisition training to include best practices and lesson learned, as well as changes in regulation and policy related to sustainable acquisition. The USACE Regional Chiefs of Contracting conducted sustainable acquisition on-the-job trainings with District and Center contracting employees to teach sustainable acquisition directly to USACE contract specialists and contracting officers. Additionally, USACE collaborated with the DoD Tri-Service Unified Facilities Criteria (UFC) Program to update 20 guide specifications to ensure sustainable acquisition requirements and business processes were incorporated.

In FY 2016, USACE aims to improve sustainable acquisition in applicable contracts by targeting identified districts with low performance on sustainable acquisition contract compliance and providing these Districts with targeted sustainable acquisition training. The Strategic Operations Director of contracting will hold purchasing managers (PM), purchasing contracting officer (PCO) and contracting officer representatives (COR) accountable for increasing sustainable acquisition as part of applicable contracts. Throughout FY 2017, the Regional, Division and Center Chief of Contracting will brief the Director on Sustainable Acquisition on agency progress towards achieving sustainable acquisitions during quarterly DMRs.

Sustainable Acquisition Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Establish and implement policies to meet statutory mandates requiring purchasing preference for recycled content products, ENERGY STAR qualified and FEMP-designated products, and Biopreferred and biobased products designated by USDA.	Yes	USACE continues to ensure that the Unified Facilities Guide Specifications include the requirements for recycled content products, ENERGY STAR qualified and FEMP-designated products, and Biopreferred and biobased products designated by USDA. In addition, USACE conducts on-the-job sustainable acquisition training at all Districts and Centers regarding the appropriate and correct reporting of clause usage in the Federal Procurement Data System Contract Action Report. USACE uses the Green Procurement Compilation to identify products, specifications and clauses to include sustainable acquisition requirements in all solicitation and contract compliance checklists.	(1) Conduct two on-the-job sustainable acquisition training sessions a month across all Districts and Centers in FY 2017 (2) Conduct an evaluation of applicable contract compliance with sustainable acquisition requirements. (3) Work in collaboration with the Tri-Services to update 20 acquisition guide specifications.
Establish and implement policies to purchase sustainable products and services identified by EPA programs, including Significant New Alternatives Policy (SNAP), WaterSense, Safer Choice, and Smart Way.	Yes	USACE continues to ensure that the Unified Facilities Guide Specifications include requirements for purchasing sustainable products and services identified by EPA programs. USACE will communicate requirements for purchasing sustainable products and services identified by EPA programs via training.	(1) Communicate requirements for purchasing sustainable products and services identified by EPA programs in 100 percent of USACE Sustainability Training classes. (2) Conduct an evaluation of applicable contract compliance with sustainable acquisition requirements. (3) Work in collaboration with the Tri-Services to update 20 acquisition guide specifications.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Establish and implement policies to purchase environmentally preferable products and services that meet or exceed specifications, standards, or labels recommended by EPA.	No	While this is not a priority strategy, USACE will work to purchase environmentally preferable products and services that meet or exceed specifications, standards, or labels recommended by EPA.	
Use Category Management Initiatives and government-wide acquisition vehicles that already include sustainable acquisition criteria.	No	USACE expects to pursue this strategy but current focus is on the statutory mandates.	
Ensure contractors submit timely annual reports of their BioPreferred and biobased purchases.	Yes	USACE will continue to ensure that FAR clause 52.223-2 -- Affirmative Procurement of Biobased Products Under Service and Construction Contracts -- is included in applicable contracts. In addition, CORs will ensure that contractors report to the System for Award Management (SAM) with a copy to the Contracting Officer, on the product types and dollar value of any USDA-designated biobased products purchased during the previous Government fiscal year.	Complete Contracting Office Representative Tool (CORT) quarterly review of contractor's report submissions in SAM and annotate the completion of the review in the Contracting Officer's Representative Module (CORM) in the Virtual Contract Environment in FY 2017.
Reduce copier and printing paper use and acquiring uncoated printing and writing paper containing at least 30 percent postconsumer recycled content or higher.	No	While this is not a priority strategy, USACE will continue to work to reduce copier and printing paper use and acquiring uncoated printing and writing paper containing at least 30 percent postconsumer recycled content or higher	
Identify and implement corrective actions to address barriers to increasing sustainable acquisitions.	No	This strategy is addressed within USACE's overall strategy.	

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Improve quality of data and tracking of sustainable acquisition through the Federal Procurement Data System (FPDS).	Yes	USACE continues to monitor and identify Districts that are underperforming on sustainable acquisitions procurement through data in FPDS.	Provide targeted sustainable acquisition training to Districts and Centers to improve quality of data tracking through the FPDS.
Incorporate compliance with contract sustainability requirements into procedures for monitoring contractor past performance and report on contractor compliance in performance reviews.	No	USACE expects to pursue this strategy but current focus is on the statutory mandates.	
Review and update agency specifications to include and encourage products that meet sustainable acquisition criteria.	No	USACE expects to pursue this strategy but current focus is on the statutory mandates.	
Identify opportunities to reduce supply chain emissions and incorporate criteria or contractor requirements into procurements.	No	USACE expects to pursue this strategy but current focus is on the statutory mandates.	

Goal 7: Pollution Prevention & Waste Reduction

Pollution Prevention & Waste Reduction Goal

E.O. 13693 section 3(j) requires that Federal agencies advance waste prevention and pollution prevention and to annually divert at least 50 percent of non-hazardous construction and demolition debris. Section 3(j)(ii) further requires agencies to divert at least 50 percent of non-hazardous solid waste, including food and compostable material, and to pursue opportunities for net-zero waste or additional diversion.

Reporting on progress toward the waste diversion goal will begin with annual data for FY 2016.

Goal Overview

USACE is currently working to establish a Corps-wide materials management policy in FY 2017. Although many USACE facilities have already implemented solid waste reduction activities including recycling and waste diversion, USACE has encountered several challenges in implementing a centrally-directed program at its Civil Works facilities. Civil Works facilities are often located in rural areas where solid waste management services are limited to collection, transportation and disposal. At many Civil Works project locations, solid waste quantification (mass or volume) and recycling services are not available. Further, based on estimates of solid waste generation by USACE employees and visitors, of the approximately 200,000 tons generated at USACE facilities annually, more than 90 percent is generated by day-use visitors and campers. These varying local conditions create a challenge in the development and issuance of centralized polices on solid waste management and diversion.

USACE participates in the U.S. Postal Service Blue Earth Recycling. In order to jump-start the program, USACE initiated pilots at a Civil Works project and one Corps-owned facility in FY 2015. To date, the two pilot facilities have signed up and are using the program successfully. For example, one of the pilot facilities has turned in approximately 850 lbs. of toner and ink cartridges. While the Blue Earth program offers many other items authorized for recycling, USACE's current memorandum of understanding (MOU) with the U.S. Postal Service allows USACE employees to recycle toner and ink cartridges only. The program allows for facilities in areas where solid waste management services are limited to take advantage of recycling through the regular postal mail services. USACE plans to promote this program across USACE by developing policy and guidance for facilities to opt into the program.

USACE is in the early stages of developing and implementing a Sustainable Recreation Plan, which will focus on visitor-related energy and water consumption and solid waste disposal practices at day use areas and campgrounds. Once USACE establishes policies, they will be integrated with sustainable buildings requirements, sustainable acquisition requirements, and greenhouse gas reduction strategies. In addition, USACE will complete its Corps-wide materials management policy in FY2016 - FY2017 that will establish the requirement for solid waste and diversion quantification to the extent that quantification and diversion services are available at USACE operating locations.

Pollution Prevention & Waste Reduction Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Report in accordance with the requirements of sections 301 through 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 (42 U.S.C 11001-11023).	Yes	USACE will continue tracking compliance with EPCRA 301 through 313 via annual facility-level assessments conducted as specified in Engineer Regulation (ER) 200-2-3 and the USACE Environmental Review Guide for Operations (ERGO) manual.	Execute 100 percent of annually scheduled internal and external ERGO (environmental compliance) assessments, including assessing compliance with relevant EPCRA requirements.
Reduce or minimize the quantity of toxic and hazardous chemicals acquired, used, or disposed of, particularly where such reduction will assist the agency in pursuing agency greenhouse gas reduction targets.	Yes	USACE, in accordance with ER 200-2-3, will emphasize toxic and hazardous materials reduction through facility specific training and program development. USACE will assess toxic and hazardous materials management practices annually through ERGO assessments.	Execute 100 percent of annually scheduled internal and external ERGO (environmental compliance) assessments and include assessment of compliance with relevant toxic and hazardous materials management requirements.
Eliminate, reduce, or recover refrigerants and other fugitive emissions.	No	Due to the nature of the USACE mission and its facilities, fugitive emissions are negligible. For example, in FY 2015 USACE reported 195 $MTCO_2e$ of fugitive emissions compared to 142,000 $MTCO_2e$ of overall Scope 1 emissions.	
Reduce waste generation through elimination, source reduction, and recycling.	Yes	USACE will complete its Corps-wide materials management policy in FY 2017.	Issue USACE Materials Management Policy in FY 2017.
Implement integrated pest management and improved landscape management practices to reduce and eliminate the use of toxic and hazardous chemicals and materials.	Yes	Integrated Pest Management is a long-standing USACE policy (ER 1130-2-500) and practice at USACE facilities. USACE will continue to implement Integrated Pest Management in accordance with established policies.	Execute 100 percent of annually scheduled internal and external ERGO (environmental compliance) assessments and include assessment of compliance with USACE Integrated Pest Management policy and practices.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Develop or revise Agency Chemicals Inventory Plans and identify and deploy chemical elimination, substitution, and/or management opportunities.	Yes	In accordance with Chapter 7 of ER 200-2-3, USACE will continue adhering to policy requirements for hazardous materials management. USACE will continue to identify opportunities to eliminate, substitute, or improve management of chemicals through USACE's Environmental Compliance Assessment Program (e.g. ERGO) and other related hazardous materials programs.	Execute 100 percent of annually scheduled internal and external ERGO (environmental compliance) assessments, including assessment of compliance with hazardous materials management requirements.
Inventory current hydrofluorocarbon (HFC) use and purchases.	No	USACE is tracking and reporting HFC purchases in the annual GHG inventory. However, due to the nature of USACE missions and facilities, emissions associated with HFCs are considered negligible.	
Require high-level waiver or contract approval for any agency use of HFCs.	No	Due to the nature of USACE missions and facilities, emissions associated with HFCs are considered negligible.	
Ensure HFC management training and recycling equipment are available.	No	Due to the nature of USACE missions and facilities, emissions associated with HFCs are considered negligible.	

Goal 8: Energy Performance Contracts

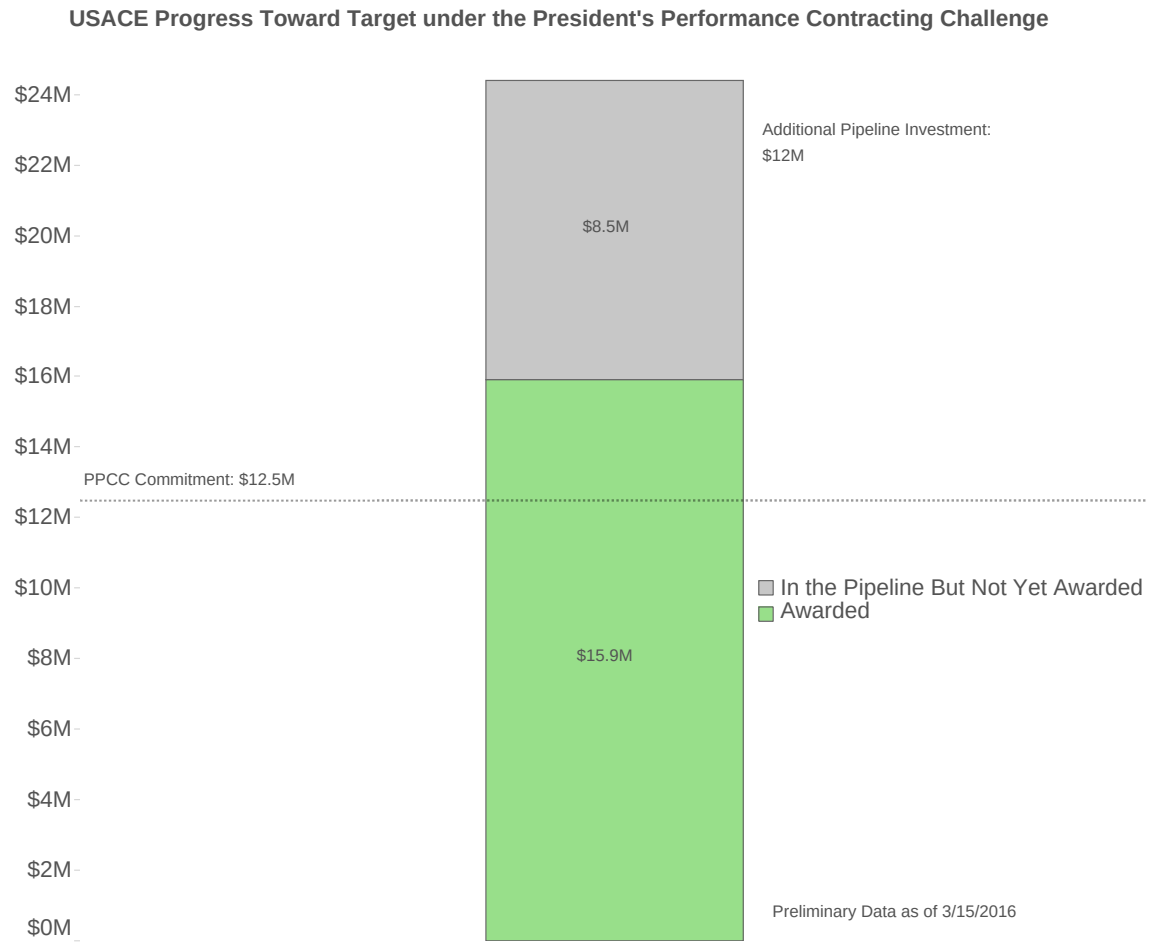
Performance Contracting Goal

E.O. 13693 section 3(k) requires that agencies implement performance contracts for Federal buildings. E.O. 13693 section 3(k)(iii) also requires that agencies provide annual agency targets for performance contracting. USACE's cumulative (Phases 1 & 2) commitment under the President's Performance Contracting Challenge is $12.5 million in contracts awarded by the end of calendar year 2016. USACE's targets for the next two fiscal years are:

FY 2017: $ 18.9 million
FY 2018: $ 5.0 million

USACE will continue emphasizing broad-scale application of alternative financing / energy performance contracting tools such as ESPCs and UESCs to achieve statutory and E.O. 13693 energy and water reduction goals. In FY 2014, USACE formally established alternative financing goals for its MSCs. MSC efforts to achieve their goals have resulted in a pipeline of ESPCs through FY 2018, some of which address large geographical regions and incorporate many USACE facilities. The annual targets for FY 2016, FY 2017 and FY 2018 reflect this pipeline of projects currently in OMB MAX.

Chart: Progress Toward Target under the President's Performance Contracting Challenge



Goal Overview

In FY 2015, the Assistant Secretary of the Army for Civil Works committed to award $12.5M in energy performance contracts by 31 December 2016. USACE has exceeded this goal by awarding $12.9M. Between FY 2016 and FY 2018, USACE will continue to pursue ESPCs/UESCs in partnership with the HNC- a federally recognized leader in energy performance contracting.

USACE will focus its ESPC/UESC efforts on covered facilities. USACE covered facilities are comprised primarily of campuses as opposed to individual buildings. Four out of the top ten USACE covered facilities (comprising over 30 percent of USACE total energy use), have ESPCs awarded or in the pipeline. An additional three of the top ten energy consuming USACE covered facilities are working toward award of ESPCs by the end of FY 2017.

Performance Contracting Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Utilize performance contracting to meet identified energy efficiency and management goals while deploying life-cycle cost effective energy and clean energy technology and water conservation measures.	Yes	USACE will continue emphasizing broad-scale application of alternative financing/ energy performance contracting tools such as ESPCs and UESCs to achieve statutory and E.O. 13693 goals.	Execute 100 percent of energy performance contracting milestones as reported in OMB MAX.
Fulfill existing agency target/ commitments towards the PPCC by the end of CY 2016.	Yes	The Assistant Secretary of the Army for Civil Works committed to award $12.5M in energy performance contracts by 31 December 2016. As of this SP, USACE has exceeded this goal by awarding $15.9M.	USACE achieved its CY 2016 commitment ($12.5M) by awarding two ESPCs for a total investment of $15.9M.
Evaluate 25 percent of agency's most energy intensive buildings for opportunities to use ESPCs/UESCs to achieve goals.	No	USACE is focusing its ESPC/UESC efforts on covered facilities, most of which are campuses as opposed to individual buildings.	

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Prioritize top ten portfolio wide projects which will provide greatest energy savings potential.	Yes	HQ USACE is centrally tracking all energy performance contracting projects. In part, HQ tracking is intended to ensure all projects stay on-track; however, central tracking also ensures that all available resources are allocated to the top priority projects (i.e. the projects with the greatest investment and energy savings opportunity).	Execute 100 percent of energy performance contracting milestones as reported in OMB MAX.
Identify and commit to include onsite renewable energy projects in a percentage of energy performance contracts.	No	Since most USACE facilities are small and geographically dispersed, USACE ESPCs generally involve multiple facilities and are only marginally economically viable within the 25 year statutory limit. Therefore, renewable energy ECMs will generally not cash-flow in the majority of USACE ESPCs.	
Submit proposals for technical or financial assistance to FEMP and/or use FEMP resources to improve performance contracting program.	No	For internal operations and infrastructure, USACE will pursue ESPCs/UESCs in partnership with HNC, which is a federally recognized leader in energy performance contracting.	
Work with FEMP/USACE to cut cycle time of performance contracting process, targeting a minimum 25 percent reduction.	Yes	USACE will contract all of its ESPCs through FEMP/USACE, taking advantage of improvements in the contracting process to reduce the cycle-time.	Execute 100 percent of energy performance contracting milestones as reported in OMB MAX.
Ensure agency legal and procurement staff are trained by the FEMP ESPC/UESC course curriculum.	No	Key USACE personnel have attended the FEMP ESPC course.	

Goal 9: Electronics Stewardship & Data Centers

Electronics Stewardship Goals

E.O. 13693 Section 3(l) requires that agencies promote electronics stewardship, including procurement preference for environmentally sustainable electronic products; establishing and implementing policies to enable power management, duplex printing, and other energy efficient or environmentally sustainable features on all eligible agency electronic products; and employing environmentally sound practices with respect to the agency's disposition of all agency excess or surplus electronic products.

Agency Progress in Meeting Electronics Stewardship Goals

If your agency cannot track performance agency-wide, do not fill in a percentage. Instead, under status, note "(Agency) does not have agency-wide systems in place to track performance for this goal."

Procurement Goal:
FY 2015 Progress:

100% of USACE organizations use the Army's Computer Hardware, Enterprise Software Solutions to ensure compliance with electronics stewardship requirements.

Power Management Goal:
FY 2015 Progress:

100% of computers, laptops, and monitors has power management features enabled.

95% of equipment has power management enabled.
5% of equipment has been exempted.

The USACE Directorate of Corporate Information (CIO) policy was issued November 2010 to cover power management and duplexing requirements. This policy was updated in July 2012, in accordance with the 30 May 2012, All Army Activities (ALARACT) 145/2012 HQDA Executive Order (EXORD) 199-12, Apply and Enforce Energy Efficiency and Management Capabilities of Information Technology.

End-of-Life Goal:
FY 2015 Progress:

100% of electronics disposed using environmentally sound methods, including GSA Xcess, Computers for Learning, Unicor, U.S. Postal Service Blue Earth Recycling Program, or Certified Recycler (R2 or E-Stewards).

100% Surplus or end-of-life goal electronics are sent to the Defense Logistics Agency (DLA) for proper disposal in accordance with GSA BULLETIN Federal Management Regulation (FMR) B-34, Disposal of Federal Electronic Assets.

Data Center Efficiency Goal

E.O. 13693 Section 3(a) states that agencies must improve data center efficiency at agency facilities, and requires that agencies establish a power usage effectiveness target in the range of 1.2-1.4 for new data centers and less than 1.5 for existing data centers.

The USACE Western Process Center (WPC) facility has a PUE of 1.4. Other data centers will not be as efficient, although significant efficiencies have been gained over the years by server consolidation and virtualization. USACE also continues to strive for energy efficiencies thru life cycle management and replacement of equipment at each center.

In implementing the policy set forth in section 1 of this order and to achieve the goals of section 2 of this order, the head of each agency shall, where life-cycle cost-effective, beginning in fiscal year 2017, unless otherwise specified: (a) promote building energy conservation, efficiency, and management by improving data center energy efficiency at agency facilities by:(A) ensuring the agency chief information officer promotes data center energy optimization, efficiency, and performance; (B) installing and monitoring advanced energy meters in all data centers by fiscal year 2018; and (C) establishing a power usage effectiveness target of 1.2 to 1.4 for new data centers and less than 1.5 for existing data centers;

Electronics Stewardship Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Use government-wide strategic sourcing vehicles to ensure procurement of equipment that meets sustainable electronics criteria.	Yes	Technology (IT) purchases and includes Energy Star and Electronic Product Environmental Assessment Tool (EPEAT) requirements.	FY 2017, at least 95% of monitors, PCs and laptops acquired will meet EPEAT requirements. Use government-wide strategic sourcing vehicles to ensure procurement of equipment that meets sustainable electronics criteria.
Enable and maintain power management on all eligible electronics; measure and report compliance.	Yes	Implementation of power management settings on IT hardware, printers, scanners, facsimiles, all-in-one devices, and copiers in accordance with CECI-E, Chief information Officer's Policy 12-009, August 2012, Subject: Information Technology Hardware Power Management Settings.	FY 2017 100% of eligible, non-exempt electronics, will have power management features enabled and will be continuously measured. FY 2017 100 % of USACE computers, computer displays, and notebook computers should enter a low power mode or turn off after a period of inactivity.
Implement automatic duplexing and other print management features on all eligible agency computers, imaging equipment; measure, and report compliance.	Yes	Policies are in place for duplex printing and power management of PCs and laptops.	FY 2017 100% of printers and PCs/laptops are compliant with policies.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Ensure environmentally sound disposition of all agency excess and surplus electronics, consistent with Federal policies on disposal of electronic assets, and measure and report compliance.	Yes	USACE tracks performance on information technology purchases, power management, and duplexing, on an annual basis as required by the OMB Sustainability and Energy Scorecard process. This year USACE will evaluate the toner-recycling program for a possible addition to the metrics in FY16. Through 2016, USACE will track the effectiveness of compliance with Army Directive 2013-26 and report, as required, through Army.	FY 2017 USACE uses the DLA for 100% of electronics disposal, unless federal requirements for recycling centers dictate otherwise.
Improve tracking and reporting systems for electronics stewardship requirements through the lifecycle: acquisition and procurement, operations and maintenance, and end-of-life management.	Yes	In accordance with Army Directive 2013-26, dated 2 Dec 2013, USACE will continue to review all output devices for efficiency and effectiveness. All devices will be reviewed for usage and location to ensure devices are sized for the correct capacity, meet mission requirements and are located for effective use.	FY 2017 USACE shall : (1) Acquire ENERGY STAR certified electronic products in 100% of relevant procurement actions. (2) 100% of toner cartridges USACE acquires in FY 2017 will be remanufactured, contain recycled content, or will be bio based.

Data Center Efficiency Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Develop issue and implement policies, procedures and guidance for data center energy optimization, efficiency, and performance.	Yes	USACE will implement a policy, procedures and guidance for data center energy performance.	FY 2017 energy performance will be monitored continuously for 100% of USACE Process Centers. FY 2017 USACE agency chief information officer will promote data center energy optimization, efficiency, and performance.
Install and monitor advanced energy meters in all data centers (by fiscal year 2018), actively manage energy, and power usage effectiveness (PUE).	Yes	The Process Center shall have continuous monitoring for effective energy power and usage.	FY 2017-2018 install and monitor advanced energy meters in all Process Centers and accurately quantify PUE.
Minimize total cost of ownership in data center and cloud computing operations.	Yes	Organizations are encouraged to group rationalized systems and applications to minimize the number of Cost-Benefit Analyses (CBA). For systems and applications with existing commercial cloud service provider contracts, organizations must contact the Army Application Migration Business Office (AAMBO) and must complete their CBAs prior to executing follow-on option years or renewing the contract	FY 2017: 25% all Major AIS will go through the AAMBO assessment process to prepare to move to the cloud.
Identify, consolidate and migrate obsolete, underutilized and inefficient data centers to more efficient data centers or cloud providers; close unneeded data centers.	Yes	Policy Implications: Updated Secretary of the Army/Chief of Staff, Army Data Center Closure Directive is currently updating plans.	FY 2017 Objective: Close six USACE Data Centers.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Improve data center temperature and airflow management to capture energy savings.	No	First, our data centers should have advanced energy meters installed by 2018. Second, data from these advanced meters are to be used to determine the Power Usage Effectiveness (PUE) quotient for the center. PUE is the total data center annual energy use divided by the IT equipment annual energy use.	

Goal 10: Climate Change Resilience

E.O. 13653, *Preparing the United States for the Impacts of Climate Change*, outlines Federal agency responsibilities in the areas of supporting climate resilient investment; managing lands and waters for climate preparedness and resilience; providing information, data and tools for climate change preparedness and resilience; and planning.

E.O. 13693 Section 3(h)(viii) states that as part of building efficiency, performance, and management, agencies should incorporate climate-resilient design and management elements into the operation, repair, and renovation of existing agency buildings and the design of new agency buildings. In addition, Section 13(a) requires agencies to identify and address projected impacts of climate change on mission critical water, energy, communication, and transportation demands and consider those climate impacts in operational preparedness planning for major agency facilities and operations. Section 13(b) requires agencies to calculate the potential cost and risk to mission associated with agency operations that do not take into account such information and consider that cost in agency decision-making.

Goal Overview

USACE places its primary focus on climate preparedness and resilience activities that reduce the vulnerabilities and improve the resilience of our water resources infrastructure and military missions to foreseeable future conditions. We are fully engaged in supporting climate resilient investment; managing lands and waters for climate preparedness and resilience; providing information, data and tools for climate change preparedness and resilience; and planning and implementing climate preparedness and resilience.

The USACE overarching climate preparedness and resilience policy and our more specific policies and technical guidance apply to both buildings and to per E.O. 13693 Section 3(h)(viii). These same policies and guidance also apply to our mission critical water, energy, communication, and transportation needs per E.O. 13693 Section 13(a). We have identified high-level vulnerabilities in our water resources management missions, hydropower mission, and navigation mission, among others, in the High-Level Vulnerability Analysis conducted to meet the March 2012 requirement of the CEQ and the Office of the Federal Environmental Executive, as well as in subsequent vulnerability assessments described in our

Adaptation Plans. Our risk-informed decision-making incorporates life cycle costs analyses per long-standing policy and guidance.

Climate Change Resilience Strategies

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Strengthen agency *external* mission, programs, policies and operations (including grants, loans, technical assistance, etc.) to incentivize planning for, and addressing the impacts of, climate change.	Yes	USACE will continue to produce and update policies and guidance to incorporate climate change in accordance with authorities. In 2016, published agency policy and technical guidance requiring that all projects account for impacts of climate change: Update to Engineering and Construction Bulletin (ECB) 2014-10, Guidance for Incorporating Climate Change Impacts to Inland Hydrology in Civil Works Studies, Design and Projects and publicly released associated web tool; published new Engineering Technical Letter (ETL) 1100-2-3, Guidance for Detection of Nonstationarities in Annual Maximum Discharges and publicly released associated web tool; new ECB, Improving Facility Resilience to Wildfire in the Wildland-Urban Interface.	Release agency policy, guidance, and supporting tools - 2016: • Update to (ECB) 2014-10, Guidance for Incorporating Climate Change Impacts to Inland Hydrology in Civil Works Studies, Design and Projects • Guidance for Detection of Nonstationarities in Annual Maximum Discharges • Complete and release downscaled climate information for Alaska and Hawaii. 2017: • Procedures to Evaluate the Magnitudes and Effects of Coastal Total Water Levels at USACE Projects • Projected flow frequency curves at selected USGS gauging station sites. • Continued work with external agency, academic and private sector experts to develop and provide water resources-related training, enhance downscaled climate information and hydrology, track mean sea level trends.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Update and strengthen agency *internal* mission, programs, policies, and operations to align with the Guiding Principles, including facility acquisition, planning, design, training, and asset management processes, to incentivize planning for and addressing the impacts of climate change.	Yes	USACE will continue to develop guidance for implementation of climate change and resilience measures based on best available science for new and existing infrastructure. USACE established a Climate Preparedness and Resilience Community of Practice with certified USACE Technical Reviewers to provide quality management of climate preparedness and resilience planning and implementation. USACE is mainstreaming climate consideration into planning, design, and implementation of new projects. USACE conducted screening level assessments of the vulnerability of existing projects and is making progress on more detailed assessments. USACE is collaborating with other agencies to provide climate preparedness and resilience training for planners and engineers.	2016 and 2017: Continue to conduct progressively more detailed vulnerability assessments to identify existing projects that are most vulnerable to changing climate: • Complete next phase of detailed assessments for vulnerable coastal projects • Finalize strategy for drought contingency plan updates to incorporate climate change. • Complete investigation and update of reservoir sediment information to identify those with highest vulnerability. Develop methods to conduct efficient and effective reservoir sediment surveys, for application to prioritized list of projects. • Enhance climate preparedness and resilience training to include planners and economists. • Develop metrics to track changes in decision making to improve climate preparedness and resilience.
Update emergency response, health, and safety procedures and protocols to account for projected climate change, including extreme weather events.	No	Continue to update USACE emergency response protocols and procedures for extreme weather events and incorporate climate change as actionable science becomes available. Continue to develop USACE vulnerability assessments of projected extreme heat and impacts on health, safety, materials, and construction scheduling.	2017: Develop tool to project extreme heat events and heat stress to support evaluation of impacts to health, safety, materials, and construction scheduling.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Ensure climate change adaptation is integrated into both agency-wide and regional planning efforts, in coordination with other Federal agencies as well as state and local partners, Tribal governments, and private stakeholders.	Yes	USACE actively participates in interagency and regional partnerships with state and local partners, Tribal governments, nongovernmental organizations, and private stakeholders. USACE policy and technical guidance require climate change adaptation to be integrated in agency wide and regional planning and engineering. Examples include the regional focus areas of the North Atlantic Coastal Comprehensive Study, the Southwest Louisiana Coastal Study, and the Coastal Texas Protection and Restoration Study. Supported April 2016 report on "Regional Sea Level Scenarios for Coastal Risk Management: Managing the Uncertainty of Future Sea Level Change and Extreme Water Levels for Department of Defense Coastal Sites Worldwide."	2016: Continue Climate Natural Resources Working Group Task 52 to identify appropriate regional water resources management associations to develop Federal agency support teams comparable to the existing WestFAST, wherein Federal agencies embed a dedicated Federal liaison to work with the Western states on common issues. 2017: • Continue to support incorporation of climate preparedness and resilience for agency-wide and regional planning efforts building on best practices from external and internal experts. • Work within flood and coastal storm risk management programs to incorporate climate preparedness and resilience into messaging on risk, residual risk, and nonstructural approaches, including emphasis on floodplain management plans.
Ensure that vulnerable populations potentially impacted by climate change are engaged in agency processes to identify measures addressing relevant climate change impacts.	Yes	USACE will continue to expand the use of social vulnerability information into agency missions, including integration into GIS capabilities. As this information develops, it will be incorporated into assessments of the vulnerability of mission and operations to climate change together with measures of physical vulnerabilities as inputs to policy development and decision-making where appropriate.	2016-2017: Work within flood and coastal storm risk management programs to incorporate climate preparedness and resilience into messaging on risk, residual risk, and nonstructural approaches 2017: Incorporate Social Vulnerability Index information in geospatial web-enabled climate vulnerability assessment tools.

Strategy	Priority for FY 2017	Strategy Narrative	Targets and Metrics
Identify interagency climate tools and platforms used in updating agency programs and policies to encourage or require planning for, and addressing the impacts of, climate change.	Yes	USACE participates in several collaborative efforts to support development of climate data and tools to support adaptation planning and implementation. Examples include the publicly available USACE Sea Level Change Calculator relies on authoritative NOAA data, the Nonstationarity Detection Tool relies on authoritative USGS streamgage data, and a consortium of agencies, academics, NGOs and the private sector contribute to the open on-line archive of downscaled projections of climatologies and hydrology for the contiguous US housed at Lawrence Livermore National Laboratory. USACE is currently collaborating with members of the consortium to develop of downscaled climate and hydrology information for Alaska and Hawai'i.	2016: Complete downscaled climate and hydrology information for Alaska and Hawai'i. 2017: Update routed climate hydrology for contiguous US and post to the open on-line archive. 2017: Update the USACE Sea Level Calculator to include capability to track changes in mean sea level and other tidal statistics. 2017: Add capability to the nonstationarity detection tool to evaluate tide gauge data and other variables of interest.

Appendices

Appendix A: 2016 Fleet Management Plan

Appendix B: 2016 Multimodal Access Plan

Note Regarding Climate Adaptation Plan:

The USACE June 2015 Climate Change Adaptation Plan Update to 2014 Plan submitted in June 2015 reflects the latest actionable climate science from the 2014 National Climate Assessment and other scientifically and legally justifiable sources. The 2015 update addressed climate preparedness and resilience actions identified in the Climate and Natural Resources Priority Agenda, recommendations from the State, Local, and Tribal Leaders Task Force for Climate Preparedness and Resilience, EO 13677 (Climate- Resilient International Development), EO 13689 (Enhancing Coordination of National Efforts in the Arctic), EO 13690 (Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input), and EO 13693 (Planning for Federal Sustainability in the Next Decade). No update to the Climate Change Adaptation Plan is planned for June 2016.

Appendix A: 2016 Fleet Management Plan

(A) Introduction that describes the agency mission, organization, and overview of the role of the fleet in serving agency missions.

The U.S. Army Corps of Engineers (USACE) has a diverse Civil and Military mission. The USACE fleet supports missions such as outdoor recreation; environmental engineering (restoration and cleanup); operations of more than 600 locks and dams; operations and maintenance of 12,000 miles of commercial inland navigation channels; the dredging of more than 200 million cubic yards of construction and maintenance dredge material annually; maintaining of 926 coastal, Great Lakes and inland harbors; restoration; the Corps Regulatory Program for wetlands; water supply storage in major Corps lakes; operating 24 percent of the U.S. hydropower or 3 percent of the total U.S. electric capacity; support to Army and Air Force installations; technical and construction support nationally and internationally; management the Army military construction program; research and development technologies to protect the nation's environment and enhance quality of life; real estate (Civil and Military); research and development; emergency operations for Civil disasters; and OCONUS Military contingencies. USACE manages this nation-wide fleet by utilizing a web-based fleet management information systems which compiles nomenclature, acquisition and disposal information as well as operation costs, utilization and fuel consumption for compliance reporting of EPAct 2005, Executive Order 13423/13514, Energy Independence and Security Act 2007, White House Memorandum May 2011 and OMB financial and property management reports. The fleet is configured based on Civil and Military missions. The Corps has a large civil mission which contributes to a majority of the funding used for fleet management. The structure spans across the entire United States (CONUS boundary and includes Alaska, Hawaii and San Juan, Puerto Rico. Currently, we provide limited support to our 2 OCONUS Districts (Japan and Korea); the USACE is projecting to directly support and report the Japan, Korea, and Germany Fleet beyond FY15. There are a total 41 Districts in the Corps of Engineers from the East Coast to the West Coast. Each District has anywhere from 10 to 20 Project sites. Administrative Functions include Logistics, Resource Management, Information Management (ACE-IT), Safety, Internal Review and Security. Vehicles are primarily used for daily operations and authorized based on the missions stated above.

(B) Criteria for justifying and assigning vehicles (including home-to-work vehicle assignments).

OPORDS for sustainability and fleet performance have been written and distributed to all USACE Commanders. Vehicles are justified and approved IAW Federal mandates, regulatory guidance, mission requirements and funding. Each Division/Center/District/Field Operating Activities (FOAs) (hence referred to as commands) execute unique fleet operations autonomously. Commands execute a variety of changing programmatic initiatives mandated by Executive and Legislative initiatives. The criteria related to justification for fleet resources can be traced to appropriations language along with associated budgetary authorities each year. Assignment of vehicles follows closely with established strategic plans; organizational missions; and Federal mandates. The ULA developed a standardized acquisition request form that contains all the appropriate information IAW with regulatory guidance and Federal mandates to assist Commands in preparing vehicle justifications; emphasis placed on cost methodologies and life cycle cost analysis. The ULA has implemented two (2) web-based sites. The acquisition request site allows customers review and submit vehicle acquisition requests that will immediately notify the USACE Fleet Manager, Transportation Division, and Fleet Program Manager. The second site, the Vehicles Available for Transfer, allows districts to identify early turn-ins with photos and other pertinent fleet information. This allows USACE to centrally manage vehicles needed for cross leveling.

The primary source for vehicle acquisition is GSA (Lease/Purchase); all other sources are required to

have a life cycle cost analysis to determine the vehicle sourcing decision. Unique circumstances (geography, terrain, mission, etc.) coupled with a vehicle sourcing decision will allow District's the flexibility to acquire outside the primary acquisition source. Approved outside sources may include local economy, GSA excess, and DRMS; vehicles acquired from the latter two sources typically have met or exceeded its life expectancy but merit further service which is determined by a technical inspection. All vehicle upgrades and additions are reviewed by Transportation Division for regulatory compliance and authorized by the MSC Commander. FOAs are not authorized to go directly to contracting to purchase a vehicle to circumvent the acquisition process as outlined in ES 29305.

There are no home-to-work vehicles authorized.

(C) Vehicle Allocation Methodology (VAM) target development and explanation for reported fleet size and cost changes or not meeting agency VAM targets.
USACE uses all Federal mandates, GAO-13-659 and FMR Bulletin B-30 for developing VAM targets in FY2015. The USACE met its optimal fleet Size (forecasted in FY11) of an inventory of 8,007 in FY 2013.

1. Criteria used is based on regulatory guidance from DOD 4500.36-R, AR 58-1 and ER 56-2-1 for retaining under-utilized and not replacing vehicles during the annual acquisition cycle. Two indicators used by USACE to determine effectiveness are miles driven and days used. If actual usage is 85% or more of the standard this is considered acceptable. Training was conducted for FOAs to develop their VAM targets and respond to questions from the Districts. USACE does monthly/quarterly reports (utilization, costs, fuel consumption etc.,) and analysis to assist with developing the VAM.

(a) Quarterly utilization reports are required for all Corps assigned or owned vehicles, including GSA vehicles, which are not exempted as mission essential, or special purpose.

Mileage. Vehicle utilization criteria of 10,000 miles per vehicle per year analyzed over a consecutive 12 month period of time. This measurement is effective when analyzing 12 month period to take advantage of seasonal adjustments

Days Used. Days used utilization standard must be determined for vehicle types, missions, or garaged areas known to never be able to meet a mileage standard. Agency established day use standard will be endorsed with agency head/Commander's approval. Available days will include each work day minus holidays, vehicle maintenance days, est. based on a five day work week of 20 days a month. Days used are then compared against the standard to determine how effective the fleet is being used. This measurement will be more effective when analyzing a consecutive 12-month period of time or longer to take advantage of seasonal adjustments.

(2) The NTV fleet reductions in VAM tool and Fleet Management Plan which is submitted by each FOA, provides the Commanders an improved snapshot of their fleets. The completion of Military and Civil projects are reported in the USACE Strategic Sustainability Performance Plan. Fleet reductions for GSA NTVs have resulted in significant cost reductions. However, agency owned vehicles that were not forecasted to be replaced on 2013 VAM, resulted in an increase for agency owned vehicle acquisition costs in FAST. USACE has exceeded VAM targets on fleet reductions.

(3) Reporting VAM numbers for OCONUS locations. Although our OCONUS locations (Europe [NAU], Korea [POF], and Japan [POJ]) report FAST numbers, USACE is not capturing their VAM.

USACE, through the ULE/ULA, plans to bring OCONUS fleet reporting underneath the ULA umbrella.

(D) Description of efforts to control fleet size and cost.

Controlling fleet size and cost will be through centralized planning; working with DA and GSA to develop USACE FOAs' TDAs/CPADs; implementation of the USACE Sustainability Plan and development of vehicle metrics for Districts/Divisions/Centers. USACE is working closely with FOAs to ensure DOD and Army regulations are followed to identify most cost effective means to acquire vehicles. USACE also provides monthly and quarterly reports for Commanders to monitor vehicle inventory, utilization and cost. USACE continues to partner with GSA's National Account Advisory Team and Department of Energy to establish optimal fleet size that is efficient and cost effective while meeting mission requirements.

From FY11 to FY14, the overall fleet reduction toward the VAM goal was 100% and fleet management costs were reduced by 10%. Actions have been taken to ensure vehicles are procured from the most cost effective source, which is generally GSA. All vehicle acquisitions outside of GSA require additional justification and cost methodology. The only trends for larger, less fuel-efficient vehicles center on special purpose type vehicles not available through GSA lease or those requiring modification for special equipment. Future costs are based on forecast of new mission requirements for Civil and Military projects; published inflation estimates; historical trends; flat across-the-board percentage increases; and mission changes.

(E) Explanation of how law enforcement vehicles are categorized within the agency (See FMR Bulletin B-33).

USACE classifies vehicles as LE based on GSA Bulletin FMR B-33. There are no exemptions required because USACE vehicles do meet criteria for LE. There are no LE vehicles in USACE.

(F) Justification for restricted vehicles.

All Class Ill and IV vehicles are justified by USACE and approved by Department of Army (DA). Justifications are on file. There is not an executive vehicle fleet in USACE and there are no limousines or armored vehicles in the USACE inventory. Armored vehicles would be authorized by DA, IAW Army guidelines and appropriations.

(G) Description of vehicle replacement strategy and results.

USACE will achieve its optimal fleet inventory, as forecasted in FY15, including plans for acquiring all light duty Alternative Fueled Vehicles (AFVs) by December 31, 2015. USACE to date has demonstrated compliance with required AFV acquisitions. Hybrid acquisitions are maximized based on funding available and incremental costs assessed. USACE is currently acquiring AFVs based on proximity to AFV fueling stations and maintenance availability. However, the agency continues to be challenged with the lack of the E85 fuel infrastructure. If there are no alternative fuels available, USACE will use electric plug-ins and/or low greenhouse gas vehicles, if this type of vehicle will meet the mission requirements. Additionally, the ULA Fleet Team developed an electronic form for comparing the purchase of an agency owned vehicle to a GSA leased vehicle that includes all direct and indirect costs projected for the life cycle of owned vehicles to the total lease costs over an identical lifecycle. In most instances, the FOAs did not want to use life cycle management to compare the most cost effective source. The USACE Fleet Manager reviews all new vehicle requirements and upgrades for compliance with Federal mandates, DOD, Army regulations and Agency OPORDS to ensure Commanders are aware of all new acquisitions that has impact to the Command's fleet inventory, operational costs, and impacts on fuel consumption targets.

(H) Description of the agency-wide Vehicle Management Information System (See FMR 102-34.340)

USACE currently utilizes two Vehicle Management Information Systems, GSA Drive-Thru to capture GSA Fleet data and GSA's Federal Fleet Management Information System (FedFMS) to capture Agency Owned Fleet data; both are fleet-dedicated and GSA developed. Additionally, GSA Drive-Thru captures all transactions and costs that covers complete life cycle of all GSA leased vehicles. FEDFMS requires manual data entry of miles driven and days used which is being captured on a monthly basis. The challenges with the use of FedFMS for agency vehicles is capturing accurate and complete data for the Agency Owned Fleet, and GSA Drive Thru is capturing day use data for GSA vehicles. The Wright Express (WEX) Fuel Card is issued to each Agency Owned Vehicle that is registered in FedFMS; the utilization of the WEX card would automate fleet data reporting (fuel and maintenance). However, many agency owned vehicles do not utilize its assigned fleet card. The majority of agency owned fleet data is requested and captured at the end of the year during FAST reporting. Bulk fuel is an issue for agency owned vehicles in remote areas, which may adversely affect reporting accurate fuel consumption for agency owned vehicles. Both systems will satisfy requirements for internal and external reports if used consistently.

(I) Plans to increase the use of vehicle sharing.

Vehicles are pool shared within the agency when possible. Vehicle sharing is primarily done at the District HQs. However, with utilization surveys and current initiatives in right sizing the fleet we are seeing more field offices cross share vehicles between project sites. The USACE fleet Manager is working to identify opportunities to advance vehicle sharing. Vehicles are not assigned to individuals; rather, vehicles are assigned to missions and/or projects.

(J) Impediments to optimal fleet management.

Early turn-in of vehicles that do not meet replacement criteria and infrastructure for AFVs that includes fuel and maintenance support. Examples are: the costs of charging stations for projects; and natural gas maintenance facilities and fuel infrastructure. Part of the issue is a culture change. Additional funds are needed to acquire charging stations for electric plug-ins to register energy consumption. Documentation has been through discussion and/or emails. Currently, support from the Commanding General to meet all Federal Laws and GSA government-wide regulations has had the biggest impact on the organization requirements compliance. USACE is making progress through educating the workforce and Command emphasis. The USACE Logistics Conference, held in March 2015, addressed senior leaders across the USACE with emphasis on developing strategic plans to meet sustainability targets. A representative from the Department of Energy's Clean Cities Coalition addressed the benefits of AF fuels and implementation of AFVs within the USACE, and how to bring AF infrastructure within the USACE footprint.

USACE is working towards the centralization of all vehicle acquisitions; some commands by-pass the USACE policy on vehicle acquisitions and acquire vehicles through their Command's Contracting Division.

(K) Anomalies and possible errors.

Flagged errors are due to inaccurate reporting by FOAs and lack of reporting from some locations this caused the USACE VAM baseline and FAST inventories to not match from year to year. The enforcement of the use of current Fleet Management Information Systems coupled with training our fleet managers will have a significant impact on the accuracy of data collection and FAST reporting.

(L) Summary and contact information.
POC is Valerie Wimberly, USACE Fleet Manager (202) 761-1618, Email is Valerie.D.Wimberly@usace.army.mil. The Budget Officer did not participate in this process. However, Budget will do the final review. Budget POC is Ms. Gertie Mouzon @ (202) 761-4886, Email is gertie.mouzon@usace.army.mil.

Appendix B: Multimodal Access Plan

2016 MULTIMODAL ACCESS PLAN
FOR UNITED STATES ARMY CORPS OF ENGINEERS
Pursuant to E.O. 13693, *Planning for Federal Sustainability in the Next Decade*

OVERVIEW

Executive Order (E.O.) 13693, *Planning for Federal Sustainability in the Next Decade*, Section 7(f), requires Federal agencies to consider the development of policies to promote sustainable commuting and work-related travel practices for Federal employees through strategies such as workplace electric vehicle charging, bicycling and other forms of active commuting, increased telecommuting and teleconferencing, and incentivizing carpooling and the use of public transportation where consistent with agency authority, Federal appropriations and other law. Agencies can effectively develop and implement such strategies through a Multimodal Access Plan (MAP).

USACE is the Nation's number one federal provider of outdoor recreation, with 403 lakes and river projects in 43 states. USACE is comprised of nine Divisions, eight centers, and a research and development center, all of which are spread nationwide. USACE owns and operates more than 600 dams, manages 926 coastal, Great Lakes and inland harbors. In total, USACE manages over 12 million acres of public lands and waters nationwide, and 90% of USACE recreation areas are located within 50 miles of a major metropolitan center. This geographical distribution is challenging from a sustainable commuting practice standpoint, as many project sites are remote, thus sustainable commuting options may not be available at all, or may not be viable for the majority of employees.

As a first step toward developing a MAP, USACE deployed a sustainable commuting and work-related travel practices survey in May 2016 that polled USACE Sustainability & Energy managers using the examples provided in the 2016 MAP template from CEQ as a guide. USACE also conducted a commuter survey of USACE employees in November 2015. Based on the results of both surveys, the most prevalent forms of sustainable commuting within USACE are discussed herein and include: Telecommuting/Teleconferencing Expansion, Carpooling/Public Transportation, Bicycling and other forms of Active Commuting, and workplace charging (see Tables B-1 and B-1a).

Multimodal Access Plan Strategy

I. Agency Telecommuting and Teleconferencing Plan

The Multimodal Access Plan implementing instructions for E.O. 13693 call for agencies to consider planning for the facilitation of activities to increase telecommuting and teleconferencing. USACE does not have a comprehensive Telecommuting and Teleconferencing Plan (TTEP) as outlined in the MAP template. Rather, USACE has separate policies for telecommuting and teleconferencing as outlined below, as well as other "telecommuting" elements that best fit USACE's needs.

Teleconferencing

OMB released Memorandum (M-12-12) outlines ways federal agencies are to reduce combined costs in administrative categories. Travel was identified as one of the areas in which more efficiency was needed. Federal agencies were required to spend at least 30% less on travel expenses beginning in FY13 through FY16, relative to FY10. The USACE Sustainability Plan references the OMB Memo M-12-12 30% reduction requirement as a priority strategy for Scope 3 greenhouse gas emissions reduction.

Teleworking

The other component of sustainable commuting practice is telecommuting. Telework is an effective strategy for mission accomplishment, ensuring Continuity of Operations Plan (COOP) in a crisis, and for recruiting and retaining valued talent. Alternate Work Schedule (AWS) is included within the telecommuting category, as it reduces commute time, and thus Scope 3 GHG emissions.

A. Summary of Strategies:

Teleconferencing: The prudent management of travel funds is essential. One of the ways USACE organizations made this requirement more sustainable is to participate in training via webinars or teleconference in accordance with Chapter 3-2 b. (3) of Engineering Regulation (ER) 55-1-2.

Telecommuting: Actively promote and implement telework throughout USACE in support of our commitment to workforce efficiency, emergency preparedness, greenhouse gas emissions reduction, and quality of work life. In some locations Alternate Work Schedules (AWS) have been utilized to reduce Scope 3 emissions, so AWS is included as an element under telecommuting.

Elements of Strategies:

- Based on the results of the USACE MAP survey, teleconferences are used for many types of training based and the Major Subordinate Commands' Sustainability Plans.
- Telework is an effective strategy for mission accomplishment, ensuring Continuity of Operations Plan (COOP) in a crisis, and for recruiting and retaining valued talent. Additionally, in some situations, telework can create cost savings by decreasing the need for office space and parking facilities, and reducing transportation costs, including costs associated with payment of transit subsidies.
    - Some USACE Divisions are working to promote and encourage opportunities in telework and AWS
    - Some USACE Districts have Telework & AWS Programs and are authorized AWS, as AWS has helped eliminate commuting travel

B. Details of Teleconferencing and Teleworking Strategies:

1. Actions and Projected Timeframes

- Follow ER 55-1-2 for teleconferences
  - Consider revising to incorporate EO 13693 requirements
  - Continue to increase the number of employees eligible
- Follow ER 690-1-1215 for telework procedure
  - Utilize existing District's telework procedures
- Follow OPM/OLRWP-12, July 1995 for AWS
  - Utilize existing District's AWS procedures

2. Roles and Responsibilities of Key Agency Personnel

- Managers, requesting, approving, and authenticating officials must ensure the purpose for the TDY cannot be accomplished by other means, e.g., video teleconference, telephone or web-conference
- Supervisors are required to review each position and determine the eligibility of their employees to participate in telework and notify these employees of their eligibility to telework (ER 690-1-1215, paragraph 8).

3. Outreach to Agency Employees

- Ensure USACE employees are cognizant of locations of teleconference equipment (including phone, webinar, and video)
- Provide online training on using webinar and video-conference equipment through the primary web meeting service used by USACE
- Provide senior leaders and management with information on potential cost savings, increased morale, and Scope 3 emissions reductions from avoided commutes

4. Incentivizing Increased Telecommuting and Teleconferencing

- Based on results of the 2015 commuter survey, telecommuting and AWS are challenging for some senior leaders and supervisors to implement.
  - 68% of MAP survey (2016) respondents indicated telecommuting was available; however, 26% indicated telecommuting was only allowed so long as mission readiness was not impacted.
  - 64% of USACE employee respondents never telework, while 24% of USACE employee respondents telework two times or less each month, and 7% telework 1 time per week (USACE Commuter Survey, November 2015).

5. Assessing Demand for Telecommuting and Teleconferencing

- Employee survey on interest in telework days relative to current schedules has been conducted in November 2015 and will continue to be conducted on routine basis.
- Results of the Commuter survey indicate that travel requirements are shrinking as personnel take full advantage of USACE webinar and video-conferencing capacity

- USACE will baseline number of days teleworked using data reported in the official time keeping system

6. Ensuring Continued Success

- Conduct agency self-assessments periodically to gauge success of a TTE
- Promote telecommuting to senior leaders and supervisors

C. Resources:
ER 690-1-1215, CEHR, Telework Program, 16 August 2011
ER 55-1-2, CELD-T, Travel and Transportation, 1 October 2002
M-12-12, OMB, Promoting Efficient Spending to Support Agency Operations, 11 May 2012
U.S. Office of Personnel Management, *Negotiating Flexible and Compressed Work Schedules* (OPM/OLRWP-12, July 1995)
OPM *Handbook on Alternative Work Schedules* (December, 1996).

II. Agency Carpooling and Transit Plan

The Multimodal Access Plan implementing instructions for E.O. 13693 call for agencies to consider new strategies to incentivize carpooling and the use of public transportation to and from Federal facilities including vehicle and bicycle sharing programs. USACE does not have a comprehensive Carpooling and Transit Expansion Plan (CTEP) as outlined in the MAP template. Rather, USACE Major Subordinate Commands (MSCs) have strategies for carpooling and public transit that are tailored to meet employee needs based on viable local and regional commuting options. Based upon the commuter survey from 2015, roughly 5% of USACE federal employees carpool and about 20% take a form of public transportation (see also results in Tables B-1a and B-5).

Summary of Strategy:

- Gauging employees interest in more frequent use of transit and carpools
    - Recognize that many operations' project sites are remote and public transportation options are not available
- The based on the survey data in Appendix B.1, the baseline of carpool and public transportation incentives use by USACE employees is:
    - 47% have carpool incentives; 10% of employees carpool in the absence of an incentive; 43% have no carpool incentive
    - 66% have public transportation incentive programs, while 2% are actively working on a public transportation incentive program
    - 24% do not have public transportation incentive program; however, 8% have made other arrangements with either a shuttle or school bus option.
    - HQUSACE will evaluate the baseline and determine the feasibility of setting targets above those baselines

A. Details of Strategy:
1. Actions and Projected Timeframes

- Identify existing practices and share them throughout USACE via the Sustainability website on Engineering Knowledge Online (EKO)
- Expand use of vehicle sharing under fleet management for local travel between meetings

2. Roles and Responsibilities of Key Agency Personnel

- Designate USACE Sustainability team to evaluate existing policies and practices, and create educational outreach materials

3. Outreach to Agency Employees and Visitors

- Post online presentation for all employees on available transit and carpool options for agency-related commuting and local travel
- Education on the health benefits of transit for employees

4. Incentivizing Carpooling and Transit usage

- Emphasize ride sharing and mass transit advantages in terms of savings to the individual
  - Encourage use of Mass Transportation Benefit Programs
  - Encourage employees to match work schedules to enable carpooling
  - Designate "preferred" parking spaces and post ridesharing information for carpooling in common spaces

5. Assessing Demand for Carpooling and Transit Services

- Routinely update Employee survey on interest in increased frequency of transit use for commuting and local travel between meetings
- Provide information to employees regarding subsidies

6. Ensuring Continued Success

- Conduct agency surveys periodically to gauge success of CTE

B. Resources:
- The American Public Transportation Association's publication "Evaluating Public Transportation Health Benefits" can provide Federal agencies with useful information for their employees about the health benefits of using transit
- DoD / Army Mass Transportation Benefit Program

III. Agency Bicycling and Active Commuter Program

The Multimodal Access plan implementing instructions for E.O. 13693 call for agencies to consider recommendations from the revised Interagency Task Force on Bicycling and Active Transportation report and to offer employees reimbursement for bicycling under the Qualified Transportation Fringe Benefits tax provision. USACE does not have a comprehensive agency Bicycling and Active Commuter

Program (BACP), but USACE Districts have separate strategies for BAC. Based upon the 2015 commuter survey, roughly 8% of respondents bike or walk to work.

A. Summary of Strategy:

- Gauge employee interest in bicycle and other forms of active commuting
    - Recognize that many USACE operations project sites are remote and BAC options may not be practical
- The baseline of BAC incentives within USACE are:
    - 12% of respondents have BACP
    - 58% of respondents do not have a BACP
    - 30% of respondents have no BACP, however, some employees are cycling to work
- Developing bicycle infrastructure (e.g., bike racks, showers, signage)
    - Some USACE Districts have developed bicycle infrastructure that encourage cycling and/or walking to work
- Periodic evaluation of overall BACP efforts

B. Details of Strategy:

1. Actions and Projected Timeframes

- Evaluate existing Districts' success stories and transmit throughout USACE via Sustainability EKO website
- Submit building modification requests such as bicycle storage and shower access to GSA's Public Building Service
- Work with agency security office to establish best practices for bicycle security outside of an Agency's building

2. Roles and Responsibilities of Key Agency Personnel

- Designate USACE Sustainability team to evaluate existing policies, and determine feasibility of drafting a BACP
    - Research The Qualified Transportation Fringe Benefit available to Federal employees who bike to work
    - Research and determine applicability of US DOT's Active Bicycle Commuting Subsidy

3. Outreach to Agency Employees and Visitors

- Issue a survey to employees based upon evaluation above.
- Determine appropriate outreach based upon findings from research above.

4. Incentivizing Bicycle Usage and other Forms of Active Commuting

- Emphasize information to employees on The Qualified Transportation Fringe Benefit available to Federal employees who bike to work and US DOT's Active Bicycle Commuting Subsidy

5. Assessing Demand for Bicycle and other Active Commuter Needs

- Routinely conduct an employee survey on commuting and local work travel

6. Ensuring Continued Success

- Conduct agency self-assessments periodically to gauge success of a BAC

C. Resources:
- US DOT's forthcoming "Implementing a Successful Bicycle and Active Commuting Program" will provide information to support establishment of a BACP.

IV. Agency Workplace Charging Plan (WCP)

The Multimodal Access Plan implementing instructions for E.O. 13693 call for agencies to consider planning for appropriate workplace charging. Forthcoming CEQ guidance on workplace charging provisions of the Fixing America's Surface Transportation (FAST) Act will provide agencies a framework for providing and being reimbursed for workplace charging used by Federal employees and authorized users for their privately owned electric vehicles. USACE does not have a comprehensive WCP as outlined in the MAP template; and, based upon the MAP 2016 survey, 2% of USACE have a WCP, 4% are actively working on a WCP, and 94% do not have a WCP.

A. Summary of Strategy:

- Gauge employee interest in EVs through the routine commuter survey
  - The baselines affiliated with this strategy are: a) WCP in place (2%), and b) number of employees driving electric cars (<1%); or hybrid cars (3%)
- Conducting outreach to agency employees on the benefits of commuting in an EV

B. Details of Strategy:

1. Actions and Projected Timeframes

- Incorporate into commuter survey questions on interest in agency provision of Electric Vehicle Service Equipment (EVSE)
- Evaluate and adopt, when practicable, DoD and Army policies on workplace charging

2. Roles and Responsibilities of Key Agency Personnel

- Designate USACE Sustainability team to evaluate existing policies and feasibility of EVs as a MAP strategy

3. Outreach to Agency Employees and Visitors

- None at this time, pending issuance of DoD and Army policy on workplace charging

4. Incentivizing EV Usage

- Provide employees with information and explanation of Federal, State, and local EV tax credits and rebates
- Make employees and authorized users aware of the flat rates they can pay to use charging infrastructure at Federal parking facilities

5. Assessing Demand for Work Place Charging Needs

Incorporate into routine commuter survey questions on travel behavior and interest in agency provision of Electric Vehicle Service Equipment (EVSE)

6. Ensuring Continued Success

- Conduct agency self-assessments periodically to gauge success of changing employee interest in EVs

C. Resources:

- The Department of Energy's Workplace Charging Challenge website has numerous resource to help guide an agency through the development of a WPC. Agencies are encouraged to join as a partner of the Workplace Charging Challenge in order to gain additional technical assistance from DOE.
- CEQ will be issuing guidance in the spring/summer of 2016 for unmetered, level one charging (UML1) for Federal employees and authorized users, and plans to issue subsequent guidance for metered level one, and level two and DC Fast Charging.
- CEQ Guidance for Federal Agency Implementation of Workplace Charging Pursuant to the Fixing America's Surface Transportation Act: Level 1 Charging Receptacles Office of Federal Sustainability Council on Environmental Quality (June 2016)

Appendix B.1 USACE Employee Commuting and MAP Survey Results

Table B-1. Summary of MAP Commuting Survey, May 2016

Commuting Strategy	**Yes**	**No**	**Actively Working**	**No program, but employees are doing on their own**
Workplace Charging Program	2%	94%	4%	0%
Bicycling and Active Commuting Program	12%	58%	0%	30%
Telecommuting Program	68%	6%	0%	NA
AWS Program	90%	10%	0%	NA
Teleconference Program	92%	8%	0%	0%
Carpooling Program	47%	43%	0%	10%
Public Transit Program	66%	24%	2%	8%

Table B-1a. Summary of Commuter Survey Responses, 2015

Commuting Mode	Responses %
Electric Car	<1%
Hybrid Car	3%
Public Transportation	20%
Carpooling	5%
Walk or Bike	8%
Telework	
Never	64%
2/Month or less	24%
1/week	7%
2/week	2%
3/week	<1%
4/week	<1%
5/week	<1%

Table B-2. Summary of Teleconference Expansion throughout USACE

Practices
• Webinars are used for many types of training • The Division will continue to implement mandatory Federal, Army and USACE travel and conference attendance restrictions • Teleconference and webinar usage has increased where possible • Abiding by moratorium on conference attendance and limited travel budgets • Reduce emissions by using video teleconferencing as often as possible • Teleconference, web meeting and similar virtual conference technologies are utilized to reduce the requirement for TDY travel • The District will seek ways to reduce employee business air travel • The District commander will issue a policy that holds supervisors accountable for the training locations they approve • Webinars and/or online meeting services are used

Table B-3 Summary of Telecommuting Practices throughout USACE

Practices-telecommuting and AWS
• Continue to focus on expanding participation in authorized telework opportunities • AWS and satellite offices have helped eliminate commuting travel • Support teleworking within each department when feasible • Promote and encourage opportunities in telework and alternative work schedules • Employees are permitted to telework in accordance with District telework program. Employees are authorized to utilize AWS • Encourage more telework in accordance with ER 690-1-1215 • Establish district-level telework policy and AWS policy • In accordance with USACE telework policy, encourage increasing the number of employees eligible for and approved for participation in telework program

Table B-4 Summary of Carpooling Practices throughout USACE

Practices
• Establish district ride share commuting programs. Many operations project sites are remote. • Employees carpool to work and try to match schedules when possible. • Emphasize Ride Sharing in terms of savings to the employees • Consider offering ride sharing and offering designated parking spaces • Protocol exists for preferred parking spaces for carpoolers • Offer preferred parking for carpools of three or more employees

Table B-5 Summary of Public Transportation Practices throughout USACE

Practices
• Streamline existing shuttle bus routes including consolidation with other agencies (optional). Many operations project sites are remote and public transportation options are not available. • District Resource Management Division manages the bus fare subsidy program for USACE employees (> 100) located in the District building • Emphasize mass transit advantages in terms of savings to employees • Encourage employee commuter travel; to date, there are 12 commuter vans with 146 riders participating in the Army Mass Transportation Benefit Program • Ensure all employees are aware of the federal public transit program • DoD policies exist that provide reimbursement for public transportation • Continue to work with the local community with development of accessible bus routes

Survey on Agency Climate Adaptation Plans

AGENCY: US Army Corps of Engineers

POINT OF CONTACT (Name, Phone, Email)**: Kathleen D. White, 202-761-4163, kathleen.d.white@usace.army.mil**

INSTRUCTIONS: To supplement your agency's 2016 Strategic Sustainability Performance Plan (SSPP) response for Goal 10: Climate Change Resilience, please complete the following survey. Please indicate how your agency has addressed each question in its current Agency Climate Adaptation Plan. If a question is fully addressed, please provide a page reference. If a question is not or is only partially addressed in your plan, please provide a succinct narrative response to the question using the following *Agency Narrative Response Template*.

Element	#	Questions: Has your agency…	Yes/No/ Partial	Plan Page Reference[5]
Risks and Vulnerabilities	Q1	Comprehensively assessed and reexamined, as appropriate, the climate change-related impacts on and risks to the agency's ability to accomplish its missions, operations, and programs?	P	10, 14, 16, 17
Mission and External Programs	Q1	Identified opportunities to support or encourage smarter, more climate-resilient investment through grants, loans or other financial incentives?	N	Not applicable
	Q2	Identified opportunities to support or encourage smarter, more climate-resilient investment through program planning requirements?	Y	
	Q3	Identified barriers, prioritized and established timelines for implementing those opportunities?	P	8, 9, 11, 15, 16
Agency Internal Policies	Q1	Identified the internal agency policies that require updating to manage climate risks and build resilience in the short and long term?	Y	
	Q2	Identified the component/office responsible for updating those policies, the level of maturity of the effort (e.g., "initiated" or "ongoing"), and key milestones or timelines for implementation?	Y	
	Q3	Successfully revised policies?	P	8, 9, 11, 15, 16
Agency Facilities and Infrastructure	Q1	Identified which facilities and infrastructure may be impacted by climate change?	P	10, 14, 16, 17
	Q2	Identified the components/offices responsible for addressing those risks, developed a strategy for addressing facilities and infrastructure that are at-risk, and identified barriers and timelines for implementation?	P	5
	Q1	[For Agencies that Develop Climate-Related Data] Established clear goals and timelines to develop and share the latest data,	P	4, 5, 14, 15

[5] Page numbers refer to USACE 2015 Update to 2014 Climate Change Adaptation Plan

Data, Information and Tools		information and tools across Federal agencies at the national, regional, and local levels?		
	Q2	Establish clear goals and timelines to integrate the latest data, information and tools into Federal programs, policies, and operations?	P	4, 5, 14, 15
Climate Literacy, Training and Technical Assistance	Q1	Conducted an assessment of climate literacy, training and technical assistance needs of agency staff and key mission-critical external partners?	P	15
	Q2	Established clear goals and timelines for implementing climate literacy, training and technical assistance programs for key partners (internal and external)?	P	15
Supply Chain	Q1	Identified climate change-related risks to critical supply chains?	P	16, 17
	Q2	Identified and implemented actions to manage supply chain risks?	P	16,17

Agency Narrative Response Template

INSTRUCTIONS: Please complete one template for each Element that is not or is only partially addressed in your current Agency Climate Adaptation Plan. Agencies may provide one template for multiple questions for each element. This template is intended to facilitate progress review discussions; they are not intended to be a comprehensive response. Please be succinct, and limit responses to one page per element.

Element:	Risks and Vulnerabilities
Question(s) under this Element that are not or only partially addressed:	☒ Q1
Action or Target Outcome:	
Please provide a narrative response. Q1: (Partial) Climate vulnerability assessments are necessary to help guide adaptation planning and implementation so that USACE can successfully perform its missions, operations, programs, and projects in an increasingly dynamic physical, socioeconomic, and political environment. Risk-informed decision making is a crucial component of USACE adaptation to climate change, which will require making sequential decisions over time and updating design and plans to incorporate new and changing information. Risk assessment includes both consequence and likelihood assessment. It is important to note the potential challenges of assigning probabilities to uncertain future conditions. For example, our approach to future sea level change relies on the use of scenarios to capture uncertainties about the major processes. Formulation of risk management alternatives under changing conditions is a crucial component of the approach. Our climate risk management approach emphasizes the need for stakeholder involvement throughout the decision process. USACE is conducting a series of progressively more detailed climate vulnerability assessments to better understand the risks posed by climate change to our missions and operations. We have completed screening-level assessments for coastal projects and watersheds, preliminary assessments of drought and reservoir sedimentation, and have produced an overview of vulnerability to ocean acidification. USACE is testing the GSA consumer-side supply chain screening tool with representative	

projects. An analysis of potential supply chain vulnerabilities, focusing on supply-side commercial navigation, has begun. More detailed assessments of vulnerable projects and systems are in progress. Refined tools and methods are also in development.	
Level of Maturity/Status:	**Ongoing/In Progress**
Major Milestones and Timeline:	
2016: Demonstration of intermediate detailed vulnerability assessments for coastal projects 2017: Prioritized list of projects requiring updates to drought contingency plans to incorporate climate change 2017: Prioritized list of projects requiring updates to reservoir sediment information to incorporate observed and projected sediment trends change 2017: Demonstration of detailed quantitative vulnerability assessments for watershed projects	
Responsible Component/Office/Individual:	
Climate Preparedness and Resilience Community of Practice/Dr. Kathleen D. White	
Challenges or Barriers to Implementation:	
These assessments rely on the production of actionable science to support decision-making and methods and tools to support efficient assessments. We are working with a variety of interagency, international, and academic experts to develop the required information to support more detailed assessments.	

Element:	Mission and External Programs
Question(s) under this Element that are not or only partially addressed:	☒ Q1 ☐ Q2 ☒ Q3
Action or Target Outcome:	
Please provide a narrative response. Q1: (No) Not applicable: USACE does not provide loans, grants, or other similar financial incentives. Q3: (Partial) USACE supports and encourages smarter, more climate-resilient investment internal to the agency through our program planning requirements. These same internal climate policies and technical guidance can help those external to the agency to make decisions about when or how to adapt. Examples include our sea level policy, Engineer Regulation (ER) 1100-2-8162 (Incorporating Sea Level Change in Civil Works Programs) and Engineer Technical Letter (ETL) 1100-2-1 (Procedures to Evaluate Sea Level Change, Impacts, Responses, and Adaptation), both of which support and encourage climate-resilient investments outside the agency. Our policy and guidance are evolving with the actionable science on which they are based.	
Level of Maturity/Status:	**Ongoing/In Progress**
Major Milestones and Timeline:	
Q1: Not applicable Q3: Milestone	
Responsible Component/Office/Individual:	
Climate Preparedness and Resilience Community of Practice/Dr. Kathleen D. White	
Challenges or Barriers to Implementation:	
USACE policy and technical guidance that support and encourage smarter, more climate-resilient investments external to the agency rely on the production of actionable science to support decision-making and methods. We are working with a variety of interagency, international, and academic experts to aggregate, integrate, and translate new science into actionable science.	

Element:	Agency Internal Policies
Question(s) under this Element that are not or only partially addressed:	☐ Q1 ☐ Q2 ☒ Q3

Action or Target Outcome:

Please provide a narrative response.

Q3: (Partial) To date, USACE efforts to develop policy and guidance for climate preparedness and resilience have addressed three major climate vulnerabilities: the need for a consistent vertical datum (vertical datum is foundation for nearly all civil and military design, engineering, and construction projects — especially coastal projects); changing sea levels; and climate-impacted hydrology. USACE has developed the following policies and technical guidance:

- Engineer Regulation (ER) 1110-2-8160 Engineering and Design: Policies for Referencing Project Evaluation Grades to Nationwide Vertical Datums
- Engineer Manual (EM) 1110-2-6056, Standards and Procedures for Referencing Project Evaluation Grades to Nationwide Vertical Datums
- ER 1100-2-8162, Incorporating Sea Level Change in Civil Works Programs.
- Engineer Technical Letter (ETL) 1100-2-1, Procedures to Evaluate Sea Level Change, Impacts, Responses, and Adaptation
- Engineering and Construction Bulletin (ECB) 2014-10, Guidance for Incorporating Climate Change Impacts to Inland Hydrology in Civil Works Studies, Design and Projects
- ETL 1100-2-2: Appropriate Application of Paleoflood Information for Hydrology and Hydraulics Decisions
- ECB 2016-5, Using Non-NOAA Tide Gauge Records for Computing Relative Sea Level Change

Additional policy and guidance will be developed as actionable science to support decision-making and methods and tools evolve over time.

Level of Maturity/Status:	**Ongoing/In Progress**

Major Milestones and Timeline:

2016: ETL on Procedures to Evaluate the Magnitudes and Effects of Coastal Total Water Levels at USACE Projects
2016: Update to (ECB) 2014-10, Guidance for Incorporating Climate Change Impacts to Inland Hydrology in Civil Works Studies, Design and Projects
2016: ETL Guidance for Detection of Nonstationarities in Annual Maximum Discharges
2016: ECB on Improving Facility Resilience to Wildfire in the Wildland-Urban Interface
2017: Guidance on the collection and use of archival tide gauge data in assessing current and future vulnerability to changing sea levels
2017: Guidance on how to incorporate climate change in drought contingency planning
2017: Guidance on quantitative assessments of climate-impacted hydrology

Responsible Component/Office/Individual:

Climate Preparedness and Resilience Community of Practice/Dr. Kathleen D. White

Challenges or Barriers to Implementation:

Internal policy and guidance rely on the production of actionable science to support decision-making and methods and tools to support efficient assessments. We are working with a variety of interagency,

international, and academic experts to aggregate, integrate, and translate new science into actionable science.

Element:	Agency Facilities and Infrastructure
Question(s) under this Element that are not or only partially addressed:	☒ Q1 ☒ Q2

Action or Target Outcome:

Please provide a narrative response.

Q1: (Partial) The USACE Civil Works Program and its water resources infrastructure – built and natural, structural and nonstructural – represents a tremendous federal investment that supports public health and safety, regional and national economic development, and national ecosystem restoration goals. The hydrologic and coastal processes underlying this water resources management infrastructure are very sensitive to changes in climate and weather. USACE has been working for a number of years now to understand and adapt to climate change and variability so that our facilities and infrastructure are resilient to changing climate and can continue providing authorized performance. For example, in 2015, USACE specifically addressed infrastructure resilience in its North Atlantic Coast Comprehensive Study (NACCS). The NACCS approach is informed by the *Infrastructure Systems Rebuilding Principles* developed jointly by USACE and the National Oceanic and Atmospheric Administration (NOAA) in 2013 and provides a model for other investigations of agency facilities and infrastructure.

Nationally, USACE is conducting a series of progressively more detailed climate vulnerability assessments to better understand the risks posed by climate change to agency facilities and infrastructure. We have completed screening-level assessments for coastal projects and are now conducting more detailed assessments of those identified as having very high or high vulnerability to changing sea levels. We are currently assessing the status of our projects with respect to incorporation of climate change in drought contingency plans and reservoir sedimentation.

These activities undertaken to improve Civil Works infrastructure resilience related to climate change help to inform and improve our Military Missions portfolio of work. USACE is transferring our vulnerability assessment capabilities to Army for use in their assessments. USACE also supported a DOD screening-level assessment of coastal vulnerability for installations worldwide.

Q2: (Partial) USACE has established the USACE Committee on Climate Preparedness and Resilience to oversee and coordinate agency-wide climate change adaptation planning and implementation. The Committee is chaired by the USACE Chief, Engineering and Construction, and reports regularly to the Assistant Secretary of the Army for Civil Works. The Committee is responsible for addressing climate risks by identifying vulnerable facilities and infrastructure, developing strategies for addressing these risks, identifying barriers, and setting timelines for implementation of climate preparedness and resilience measures.

Level of Maturity/Status:	**Ongoing/In Progress**

Major Milestones and Timeline:

2016: Demonstration of intermediate detailed vulnerability assessments for coastal projects
2016: Updated climate hydrology to support project and system-level assessment of projects impacted by climate change

2017: Project level vulnerability assessment of projects impacted by hydrologic climate change The results of the climate vulnerability assessments provide input to the USACE Infrastructure Strategy and Asset Management Programs.
Responsible Component/Office/Individual:
Climate Preparedness and Resilience Community of Practice/Dr. Kathleen D. White
Challenges or Barriers to Implementation:
These assessments rely on the production of actionable science to support decision-making and methods and tools to support efficient assessments. We are working with a variety of interagency, international, and academic experts to develop the actionable science required to support more detailed assessments.

Element:	Data, Information and Tools
Question(s) under this Element that are not or only partially addressed:	☒ Q1 ☒ Q2

Action or Target Outcome:

Please provide a narrative response.

Q1: (Partial) The USACE established clear goals through our overarching Policy Statement: "USACE shall continue undertaking its climate change preparedness and resilience planning, in consultation with internal and external experts and with our districts, divisions, and Centers, and shall implement the results of that planning using the best available – and actionable – climate science and climate change information. USACE shall also continue its efforts with other agencies to develop the science and engineering research on climate change information into the actionable basis for adapting to climate change impacts."

USACE is working to develop and share data, information, and tools to support climate preparedness and resilience. Examples include our contributions to the open on-line archive of downscaled projections of future climatologies and hydrology for the contiguous US hosted at Lawrence Livermore National Laboratory, the publicly accessible on-line Sea Level Change Calculator, Nonstationarity Detection Tool, an annotated bibliography on nonstationarity, and a series of 21 concise and broadly-accessible summaries of the current science with specific attention to USACE missions and operations released in 2015.

USACE is also conducting research and development on climate change through the activities of its Engineer Research and Development Center (ERDC). The goal of this research is to provide science and technology that will help to sustain missions, protect assets, and ensure viable operations in the face of climate change. ERDC's portfolio of climate change research projects supports both military and Civil Works applications. Science, engineering and technologies are being developed to gain understanding of the consequences of climate change for natural and engineered systems relevant to the military and civil works programs, and to support the development of science-informed adaptation strategies. The research portfolio includes more than 20 projects in four focus areas: system-scale vulnerability assessment and risk quantification; Climate change processes and impacts in cold regions; Ecosystem response modeling to characterize effects on natural systems, and Integrating climate change information with planning and operational practices.

Q2: (Partial) USACE is also working to incorporate the data, tools, and information of other Federal agencies into our own policy and guidance. For example, we rely on NOAA tide gauge information and USGS coastal shoreline erosion methods in our coastal programs. As future data, information, and tools are developed, they will be incorporated as appropriate considering national security implications.

Level of Maturity/Status:	**Ongoing/In Progress**

Major Milestones and Timeline:

2016: Sea Level Change Tracker to visualize changes in mean sea level based on NOAA tide gauge data
2017: Quantitative tools to evaluate climate-impacted hydrology based on refined information climate-impacted hydrology produced by a consortium of agency and academic experts (including USACE) which will be provided to the open on-line archive hosted at Lawrence Livermore National Laboratory

Responsible Component/Office/Individual:
Climate Preparedness and Resilience Community of Practice/Dr. Kathleen D. White
Challenges or Barriers to Implementation:
Actionable climate data and tools rely on the production of actionable science to support decision-making and methods and tools to support efficient assessments. We are working with a variety of interagency, international, and academic experts to develop the required actionable information.

Element:	Climate Literacy, Training and Technical Assistance
Question(s) under this Element that are not or only partially addressed:	☒ Q1 ☒ Q2

Action or Target Outcome:

Please provide a narrative response.

Q1: (Partial) USACE identified agency knowledge gaps in collaboration with other mission-critical water-resources related agencies in a series of three interagency reports in 2009, 2011, and 2013. In doing so, we reviewed available information and identified necessary training. USACE staff benefit from a holistic community of practice approach in which "learning while doing" is a preferred method for our technical staff, including planners, engineers, economists, scientists, and operators.

Q2: (Partial) USACE continues to develop and deploy technical training for managing water resources under climate changed futures in partnership with other Federal partners in the Climate Change and Water Working Group and with the COMET program of the University Corporation for Atmospheric Research (UCAR). USACE, the Bureau of Reclamation, and COMET have produced and delivered a series of courses titled "Assessing Natural System Impacts Under Climate Change" that deliver technical training to water resources professionals supporting incorporation of climate science and climate change information into impact assessments. These courses are available to Federal and non-Federal professionals whose work includes assessing water resource-related impacts under climate change. USACE has also supported interagency training at the National Conservation Training Center (NCTC), including a course on "Climate-Smart Conservation with Scenario Planning."

USACE has also supported the development of, and presented at, the "Climate Change and Sustainability for Senior Executive Leaders" class by OPM and other Federal agencies. This 2.5 hour course has three parts: Climate and Sustainability 101; Responding to Climate Change and Federal Leadership and Decision-Making. It has been presented to over 500 Senior Executives and senior managers from more than 35 federal agencies improve their abilities to lead their agencies through climate change and sustainability challenges.

Level of Maturity/Status:	**Ongoing/In Progress**

Major Milestones and Timeline:

2016: Pilot residential course on "Integrating Climate Change into Longer-term Water Resources Planning and Environmental Compliance."
2016: Develop and pilot course on sea level change and its associated supporting geodetics
2016-2017: USACE continues to build capacity at the local level by involving district staff in the development of climate data, methods, tools, and technical guidance to encourage "learning while doing."

Responsible Component/Office/Individual:

Climate Preparedness and Resilience Community of Practice/Dr. Kathleen D. White

Challenges or Barriers to Implementation:

The major barriers are the time and resources necessary to develop appropriate technical classes and effective methods of capacity building within each agency.

Element:	Supply Chain
Question(s) under this Element that are not or only partially addressed:	☒ Q1 ☒ Q2
Action or Target Outcome:	

Please provide a narrative response.

Q1: (Partial) The 2014 USACE Adaptation Plan provided an initial assessment that, different from many other agencies, USACE could experience climate change-related supply chain issues from the customer side and from the supply side. For example, potential customer-side supply chain issues include disruptions to necessary equipment, supplies, and resources supporting large construction projects (including dredging and beach renourishment) due to adverse conditions caused by extreme events (e.g., drought, flood, tornado, earthquake, ice storm) or economic conditions (e.g., strike, recession); and disruptions to power necessary to support operations of locks, dams, canals, pumps, hurricane barriers and other gated structures, and support critical management functions such as emergency operations and water control management systems. As a provider of inland and maritime navigation services, USACE could face potential supply-side supply chain issues including disruption of inland/maritime navigation due to equipment failure or accidents (e.g., loose barge impacting lock and dam structural integrity or performance, oil spill in navigable waterway); disruption of inland/maritime navigation due to natural processes (e.g., shoaling, sedimentation, sand transport) or extreme events (e.g., drought, flood, hurricane, river or lake ice); and alterations in river flow patterns resulting from flood or drought that impact the structure and function of natural resources providing valuable ecosystem services, water availability and quality, and lake levels impacting hydropower generation and recreation services. Additional supply-side supply chain risks that may impact our partners and stakeholder are related to drought and reservoir sedimentation that impact the availability and reliability of water storage in our reservoir systems. These areas are the focus of ongoing vulnerability assessments.

We are already dealing with many of these types of disruptions due to extreme weather events, and thus have fairly robust policies, guidance, and contingency plans in place to address these disruptions.

USACE is one of several agencies participating in a pilot of the GSA “Framework for Managing Climate Change Risks to Federal Agency Supply Chains.” The pilot involves applying the new tool to a range of representative projects to identify consumer-side risks to our missions and operations. USACE and the other pilot agencies are sharing lessons learned to support the next iteration of the tool. We will use this information to identify risks and measures to improve preparedness and resilience.

Q2: (Partial) USACE is making progress on developing and testing methods to support reservoir operations despite observed and projected increases in reservoir sedimentation and increases in drought frequency and magnitude. We will continue to identify and implement actions to reduce other supply- and consumer-side supply chain risks as knowledge evolves.

Level of Maturity/Status:	**Ongoing/In Progress**
Major Milestones and Timeline:	

2016-2017: Preliminary results of a tailored program to understand and address supply chain impacts to explore the effects of both flood and drought on navigation efficiency. These results will guide future work. 2016-2017: Pilot GSA consumer-side supply chain framework.
Responsible Component/Office/Individual:
Climate Preparedness and Resilience Community of Practice/Dr. Kathleen D. White
Challenges or Barriers to Implementation:
The major barriers are the time and resources necessary to asses supply chain impacts, together with actionable climate data and tools that rely on the production of actionable science to support decision-making. We are working with a variety of interagency, international, and academic experts to develop the required actionable information.