



Assistant Secretary of
the Army for
Civil Works



**US Army Corps
of Engineers®**

U.S. Army Corps of Engineers

Sustainability Report and Implementation Plan 2020

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U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

Table of Contents

Executive Summary	1
Implementation Summary: Facility Management	2
1. Facility Energy Efficiency.....	2
2. Efficiency Measures, Investment, and Performance Contracting	3
3. Renewable Energy	4
4. Water Efficiency	4
5. High Performance Sustainable Buildings.....	5
6. Waste Management and Diversion.....	6
Implementation Summary: Fleet Management.....	8
1. Transportation / Fleet Management	8
Implementation Summary: Cross-Cutting Operations.....	9
1. Sustainable Acquisition / Procurement.....	9
2. Electronics Stewardship.....	10
3. Greenhouse Gas Emissions.....	11
Agency Priorities and Highlights	11
Notable Projects and Highlights for FY19/20.....	11
Acronyms	13

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

Executive Summary

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 stakeholders 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 a commitment by all to achieving a sustainable future for 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.

This USACE 2020 Sustainability Report and Implementation Plan (SRIP) focuses on achieving energy and sustainability goals and targets, integrating sustainability into all USACE missions, activities, and actions, and growing sustainability leaders. This SRIP describes USACE's past sustainability performance and the priority strategies for fiscal years (FY) 2021 and 2022 to maintain or improve USACE-wide performance.

Agency Scope

USACE employs approximately 30,000 staff, manages over 7.5 million acres of land, owns or leases about 1,000 buildings comprising over 15 million gross square feet (GSF) in over 600 locations throughout the U.S., owns or leases nearly 7,000 fleet vehicles, and annually awards contracts valued over \$18.3 billion.

Performance Highlights

USACE continues to focus on the following goal areas:

- **Facility Energy Efficiency:** 35.0% reduction in energy intensity relative to the FY03 baseline, including a 0.2% decrease in FY19 from FY18.
- **Renewable Energy Use:** 16.8% of USACE-wide electricity use is renewable, which is a 0.9% decrease from FY19 from FY18.
- **Transportation/Fleet Management:** 22.3% reduction in petroleum fuel use in covered fleet relative to the FY05 baseline, but a 3.1% increase in FY19 from FY18.

Leadership

The Assistant Secretary of the Army for Civil Works (ASA(CW)) is the Chief Sustainability Officer 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 for the Sustainability Program. Internal sustainability performance metrics are tracked quarterly using existing management review processes

Priorities

Top priorities for FY21 and FY22 are as follows:

- Publish updated USACE Sustainability Operations Order (OPORD) which is the directive issued by USACE leadership to affect the coordinated execution of the Sustainability program.

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

- Finalize the master list of buildings over 10,000 gross square footage (GSF) for prioritization of Sustainable Federal Building (SFB) assessments. Conduct SFB assessments at Major Subordinate Command (MSC)-prioritized buildings over 10,000 GSF.
- Prioritize use of cost-saving, state-of-the-art technologies (e.g., energy auditing technology) for building efficiency improvements and benchmarking.
- Execute the energy resiliency project at Humphreys Engineer Center Support Activity (HECSA) through an enhanced use lease that will provide power to the grid and sustain critical missions during extended grid outages and threats.
- Continue to focus on reducing water intensity through infrastructure improvements and water conservation measures.
- Improve and update USACE's Sustainable Acquisition Clause Selection Tool and the Compliance Assessment Tool that facilitate the inclusion of appropriate sustainable acquisition requirements in contracts, assess contract compliance with those requirements, and conduct training sessions at targeted Districts/Centers.

To achieve our sustainability goals, USACE will employ a systems-based 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 SSC.

Implementation Summary: Facility Management

1. Facility Energy Efficiency

FY 2019 Energy Intensity Progress (Btu/GSF):

35.0% reduction from FY03

0.2% reduction from FY18

FY 2020-FY 2021 Plan:

0.1% reduction in FY20 from FY19

0.1% reduction in FY21 from FY20

USACE prioritizes cost-effective investments and energy efficiency improvements in its infrastructure to reduce energy intensity and works to incrementally decrease facility energy use through FEMP guidance and training of local facility energy managers. Facility energy managers undergo two trainings: Section 432 of the Energy Independence and Security Act of 2007 (EISA 432) specialized training and AEE Certified Energy Manager (CEM) government-focused training. EISA 432 training reinforces documentation requirements and trains managers on how to use the EISA 432 compliance tracking system (CTS). The AEE CEM training is mandated training for covered facility managers that teaches staff how to perform energy assessments and minimize energy usage at their facilities.

Implementation Status

USACE has continued to plan for and execute energy conservation measures (ECMs) annually to reduce energy intensity. In FY19 and FY20, natural events, such as increased use of pump stations during floods, continued to cause significant variations in USACE-wide operations and therefore impacted energy consumption and mission requirements. Due to restrictions caused by nationwide COVID-19 response, a significant number of USACE facilities closed beginning in March 2020. These closures affected the ability to hold several scheduled trainings, including one for Certified Energy Managers (CEM). Despite these variations in operational tempo, USACE achieved the following in FY19 and FY20:

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

- Executed approximately 76% of the Civil Works Operations and Maintenance (O&M) plans for energy efficiency investments in FY19.
- Adopted General Services Administration (GSA) area-wide contracts, where feasible, to reduce energy costs.
- Held two training sessions with the Federal Energy Management Program (FEMP) for energy managers to document ECM savings in Compliance Tracking System (CTS).
- Reviewed the 5-Year Metering Plan and continued to make updates to the appropriate buildings inventory to support progress and year-end reporting.

Priority Strategies & Planned Actions

In FY21 and FY22, USACE will:

- Update and implement the USACE OPORD focusing on the 5-Year Metering Plan consistent with all Federal guidance.
- Continue to make cost-effective investments in infrastructure and execute at least 95% of all Civil Works O&M plans for energy efficiency investments annually.
- Continue to adopt GSA area-wide contracts, where feasible, to reduce energy costs.
- Continue to utilize commercial utilities programs to renegotiate utility rates and utility service contracts.
- Continue to train and designate energy managers for all USACE covered facilities and ensure that all energy managers have access to complete and accurate energy data to inform energy management decisions.
- Further develop dashboards using the energy data visualization capability provided by the Corps of Engineers Reduced and Abridged FEMP Tool (CRAFT) to inform decisions regarding energy efficiency investments.

2. Efficiency Measures, Investment, and Performance Contracting

FY 2019 Performance Contracting – Investment value and number of new projects awarded:

\$0.0M / 0 projects in FY19

FY 2020-FY 2021 Plan:

\$0.0M / 0 projects in FY20

\$0.0M / 0 projects in FY21

USACE's strategy for efficiency measures, investment, and performance contracting is to continue to implement ECMs identified during energy audits of covered facilities and to provide direct investments to decrease energy consumption at our key facilities. In FY19 USACE invested \$4.1 Million in energy improvements with 3,093 BTUs saved with each dollar invested. Because USACE oversees a variety of hydropower projects at many facilities, it is largely self-reliant on utilities, eliminating the need for energy savings performance contracts (ESPCs). USACE facilities cannot generate enough utility costs to make an ESPC worthwhile. Further, USACE facilities are independently funded through reimbursable projects rather than appropriated funding like many other federal agencies. This makes it difficult for USACE to find economically viable ESPCs and utility energy services contracts (UESCs).

Implementation Status

Although USACE has exhausted all economically viable traditional ESPC and UESC opportunities to date, USACE achieved the following in FY19 and FY20:

- Continued to implement five ESPCs awarded in FY17 and currently in measurement and verification (i.e., performance) phase, documented savings through third party consultants, and verified that the actual cost savings met or exceeded the projected cost savings;

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

- Conducted internal education and outreach regarding the ESPC ENABLE Program and is currently in the initial stages of investigating a potential small project at the Buffalo District; and
- Set internal goal to implement 95% of audit-identified ECMs, resulting in successful compliance in 7 out of 9 MSCs.

Priority Strategies & Planned Actions

In FY21 and FY22, USACE will:

- Continue to support UESCs and power purchase agreements (PPA) at facilities where these tools are determined to be economically viable.
- Monitor and assess cost and energy savings resulting from previously awarded contracts.
- Identify additional opportunities to implement the ESPC ENABLE Program at facilities.

3. Renewable Energy

FY 2019 Renewable Electricity Use:

16.8% of total electricity in FY19

FY 2020-FY 2021 Plan:

17.0% of total electricity in FY20

17.0% of total electricity in FY21

USACE prioritizes investments in the modernization of USACE hydropower generation capabilities to increase capacities and efficiencies and, therefore, the generation of incremental hydropower. The USACE renewable energy portfolio primarily consists of hydropower; however, USACE continues to slowly expand its portfolio incrementally with other types of renewable energy (e.g. small solar).

Implementation Status

The small size and relatively low energy consumption of most USACE-covered facilities limit opportunities for economically viable PPAs. Because USACE facilities are independently funded, appropriated funding cannot be used to investigate the feasibility of PPAs at USACE facilities and the performance period is reduced by the time used for planning and engineering.

USACE achieved the following in FY19 and FY20:

- Exceeded USACE's 15% renewable energy target primarily due to the generation of incremental hydropower.
- Generated over 62,700 megawatt hours (MWh) of renewable energy from USACE's 37 solar, 11 hydropower, two wind, and one green energy purchase projects and assets, with most of this power stemming from the hydropower facilities as compared to 16,269 MWh of renewable energy in FY08.
- Developed "Lesson Learned" from a pilot solar PPA project to include the need for simplified scopes/design, the criticality of site selection, and the impact of long, internal timelines.
- Confirmed that PPAs are granted Civil Works Title 33 authority and set up the authority framework to look at the potential for future PPAs.

Priority Strategies & Planned Action

In FY21 and FY22, USACE will:

- Continue to track increases in incremental hydropower generation from rehabilitated units; and
- Execute at least 95% of Civil Works O&M funds provided for renewable ECMs.

4. Water Efficiency

FY 2019 Water Intensity Progress (Gal/GSF):

12.8% reduction from FY07

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

0.1% increase from FY18

FY 2020-FY 2021 Plan:

0.5% reduction in FY20 from FY19

0.5% reduction in FY21 from FY20

USACE's overarching strategy for water efficiency is to incorporate water conservation measures at the largest water-consuming facilities across USACE. Water efficiency is USACE's main challenge as a water-based organization, but USACE is leading efforts to implement water conservation measures, replace and repair water lines subject to recurring breaks and repairs, and meter all high-water consuming facilities, particularly campgrounds.

Implementation Status

USACE continues to prioritize the implementation of water conservation measures and execution of waterline projects at the largest water-consuming facilities across USACE. For example, at the Waterways Experiment Station (WES) in Vicksburg, Mississippi, USACE's largest water-consuming facility, USACE has installed 81 water meters as part of the advanced metering system.

Despite the installation of some advanced meters, cybersecurity concerns over all advanced meters have led to challenges collecting data to ensure conservation measures and projects are effective. To update servers, all advanced meters must be taken offline and checked manually. USACE plans to continue focus on traditional standard meters since they are more practicable and cost effective at this time.

Stormwater is not centrally managed by USACE but delegated to each field operating activity (FOA) to follow local regulations and apply for permits as required. All FOAs are encouraged to apply best management practices for stormwater. Best management practices, as well as violations, are captured during internal environmental assessments and documented in the USACE internal database (CRAFT).

In FY19 and FY20, USACE continued to achieve the following:

- Completed 13 water conservation projects in FY19.
- Continued to successfully achieve annual water consumption reduction at USACE facilities in the Northwestern Division since FY2013. FY19 was MSC's record lowest water consumption year yet, tracking at 53 MGal, which was a 21.8% reduction from FY18.
- Achieved successful water consumption reduction at USACE facilities in the North Atlantic Division (NAD) in FY19, following a spike in consumption in FY18. FY18 saw a 2.9 MGal increase in water consumption from FY17, but NAD counteracted this increase with a 3.5 MGal decrease in water consumption in FY19.
- Achieved successful overall reduction of water usage at USACE Buffalo District headquarters office in FY19 by installing inexpensive equipment such as flow restrictors and no-touch faucets.

Priority Strategies & Planned Actions

In FY21 and FY22 USACE will:

- Track a set of leading metrics focused on the completion of energy and water audits.
- Implement 100% of planned water conservation measures.
- Continue to prioritize waterline replacements, especially at the largest USACE water-consuming facilities.
- Implement water management improvements at Waterways Experiment Station (WES), USACE's largest water consumer, which will improve potable water intensity performance.

5. High Performance Sustainable Buildings

FY 2019 Sustainable Buildings Progress:

7 sustainable Federal buildings

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

5.9% of buildings / 3.2% of gross square footage (GSF)

FY 2020-FY 2021 Plan:

6.0% of GSF in FY20

8.0% of GSF in FY21

USACE continues to prioritize sustainable federal building (SFB) assessments at SFB-viable Revolving Fund and O&M Fund buildings. The USACE-wide focus is to achieve 15% SFB GSF by 2025 and improve the process for recording and updating SFB data.

Implementation Status

In FY18 and FY19, USACE achieved the following:

- Tracked SFB compliance according to the Guiding Principles for Sustainable Federal Buildings and the Department of Defense (DOD) Unified Facilities Criteria (UFC) for High Performance and Sustainable Building Requirements (UFC 1-200-02).
- Prioritized SFB assessments at USACE-owned buildings by largest GSF, building type, occupancy, and mission relevance.
- Completed assessments to qualify three additional buildings as sustainable, which will bring the total number of SFBs to seven and bring the sustainable GSF to 3.0% in FY20.
- Completed 55 SFB assessments across USACE;
- Updated the Real Estate Management Information System (REMIS), agency system of record for real property, with SFB data (e.g. building codes).
- Implemented a new, internal performance metric to provide quarterly updates on Sustainable Federal Buildings compliance.

Priority Strategies & Planned Actions

In FY21 and FY22 USACE will:

- Continue to focus on SFB compliance at USACE-owned buildings by largest GSF, building type, occupancy, and mission relevance, with an expected addition of one newly constructed and one existing (Leadership in Energy and Environmental Design) LEED silver building in FY20 and five additional existing buildings meeting Sustainable Federal Building Assessments (Guiding Principles compliance) at Fort Worth District.
- Prioritize SFB assessments and improvements for remaining Revolving Fund buildings by largest GSF and those with most significant impact in sustainable improvements.
- Lead specialty trainings to assist with SFB assessments and improvements at O&M Fund buildings.
- Continue to complete SFB assessments and incorporate sustainability best practices in USACE facility portfolio management.
- Update the SFB data in REMIS, ensuring that LEED information is accurately accounted for at all USACE sites.
- Continue to partner with the General Services Administration (GSA) to consolidate, co-locate, and re-configure existing USACE leased space by using the Administrative Space Utilization Report to optimize leased office and warehouse space.

6. Waste Management and Diversion

FY 2019 Non-hazardous Waste Management and Diversion:

155,624.1 metric tons of non-hazardous solid waste generated*

3% diverted and 97% sent to treatment and disposal facilities

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

FY 2020-FY 2021 Plan:

TBD in non-hazardous solid waste generated in FY20 from FY19
5% diverted and 95% sent to treatment and disposal facilities in FY20

TBD in non-hazardous solid waste generated in FY21 from FY20
7% diverted and 93% sent to treatment and disposal facilities in FY21

**not including construction and demolition waste*

USACE's overarching strategy for waste management and diversion is comply with all Federal requirements regarding waste management and disposal, as well as state, interstate, and local requirements for management and disposal of non-hazardous solid waste.

Implementation Status

USACE continues to prioritize the education and implementation of the USACE-wide Non-Hazardous Solid Waste Diversion and Materials Management Policy with environmental compliance audits (i.e., Environmental Review Guide for Operations (ERGO)), ERGO auditor classes, ERGO tools (i.e., Compliance and Process Tracking Application (CPTTrack) to track best practices and manage historical audit data), and the development of innovative approaches for reducing waste and increasing waste diversion. USACE has since developed a module within the USACE internal database (CRAFT) to track and report on waste generation and diversion in order to better manage and reduce waste.

Reporting construction and demolition (C&D) waste has remained a challenge for USACE because modern, market-based recycling services are not readily available at many Civil Works project locations and USACE is working to standardize C&D reporting requirements across the enterprise. The DOD Integrated (Non-Hazardous) Solid Waste Management Policy requires all facilities to meet a non-hazardous solid waste diversion goal of 60% C&D diversion. There is not a baseline since this has recently been implemented and local recycling requirements vary across facilities and lake projects.

In FY19 and FY20, USACE achieved the following:

- As of FY19, 45% of USACE projects reported their waste data in the CRAFT module.
- Provided quarterly training and tools (online solid waste inventory worksheet and FAQ) to the field-level project managers on implementing the Non-Hazardous Solid Waste Diversion and Materials Management Policy.
- Included a new annex on Non-Hazardous Solid Waste Diversion and Materials Management to the USACE-wide operation guidance for FY20 to highlight guidance and procedures for tracking and meeting federal requirements for diversion and disposal of non-hazardous solid waste and C&D Debris, to emphasize Integrated Solid Waste Management (ISWM) program development, to improve data quality collection.
- Held one ERGO auditor class in FY19, held two ERGO auditor classes in FY20, and scheduled one ERGO auditor class for early FY21.

Priority Strategies & Planned Actions

In FY21 and FY22 USACE will:

- Increase outreach within USACE to improve data capture for all non-hazardous waste generated and diverted in CRAFT.
- Continue to educate the field-level project managers on the Non-Hazardous Solid Waste Diversion and Materials Management Policy by providing training on how to use the CRAFT solid waste module.
- Continue to encourage and identify innovative options to reduce waste and increase diversion.

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

- Execute 100% of annually scheduled internal and external ERGO audits to include pollution prevention, Emergency Planning and Community Right-to-Know Act (EPCRA) requirements, and/or toxic/hazardous material management requirements in FY20.
- Encourage more district offices to participate in the program, allowing for funds from sales of recycled material to be returned to individual Districts diverting the material.
- Divert a minimum of 60% by weight of the project construction waste and demolition debris/waste from landfills annually.
- Divert a minimum of 40% of non-hazardous solid waste, including food and compostable material, and visitor-generated non-hazardous solid waste from landfills annually.
- Establish contract procedures for reporting C&D diversion rate via the Construction Waste Management and Disposal Unified Facilities Guide Specifications.
- Execute two ERGO auditor classes in FY21.
- Capture Revolving Funded figures for non-hazardous solid waste from existing contracts.

Implementation Summary: Fleet Management

1. Transportation / Fleet Management

FY 2019 Petroleum Reduction Progress (Gal):

22.3% reduction in petroleum fuel since 2005
4.2% increase in petroleum fuel since FY18

FY 2020-FY 2021 Plan:

5% reduction in FY20 from FY19
2.0% reduction in FY21 from FY20

FY 2019 Alternative Fuel Use Progress (Gal):

4,057% increase in alt fuel since 2005
6.5% decrease in alt fuel since FY18

FY 2020-FY 2021 Plan:

0.5% increase in FY20 from FY19
0.5% increase in FY21 from FY20

USACE's overarching strategy for transportation and fleet management is to continue to increase alternative fuel use, continue to use electric vehicles where mission allows, and continue to execute vehicle acquisition strategy, which means determining optimal vehicles for meeting mission requirements (e.g. replacing a gasoline vehicle with alternative fuel vehicle).

Implementation Status

In FY19, USACE support to other Federal agencies under the Economy Act drove increase in petroleum use and a decrease in alternative fuel use. In particular, USACE added 100 vehicles to the USACE fleet due to mission expansion.

USACE continues to annually perform the Vehicle Allocation Methodology (VAM)/Vehicle Utilization Review Board (VURB) analysis to streamline fleet operations and maintain mission capability. With a GSA-leased fleet size of 6,568 vehicles, 4,071 are alternative fuel vehicles (62% of total) and include E85, gas-hybrid, plug-in hybrid, compressed natural gas (CNG)/dual/diesel fuel, and electric-dedicated vehicles.

USACE recognizes the importance of balancing alternative fuel vehicles with mission capability requirements as USACE continues to observe marginal changes in its USACE-wide alternative fuel use. Despite USACE not meeting its incremental reduction requirement, USACE achieved the 20% statutory petroleum use reduction as early as FY15. Despite the FY20 performance, in FY19 and FY20, USACE:

- Deployed four Biodiesel and Renewable Diesel Fuel vehicles, three plug-in hybrid electric vehicles (PHEVs), and 585 petroleum-efficient vehicles USACE-wide with an overall EPA Act Compliance of 84%.
- Conducted the annual VAM/VURB analysis in FY20 to optimize the fleet size, focusing on the disposal of non-alternative fuel vehicles and transfers of alternative fuel vehicles to active USACE locations.
- Developed and piloted a new fleet metric (percent change in fleet miles per petroleum gallon [MPPG] relative to FY2015 baseline) to drive increased alternative fuel and EV use, which allows increased

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

flexibility to account for mission needs. Eight of nine MSCs met the internal USACE goal of a 5 MPPG increase from the FY15 baseline.

- Encouraged the implementation of an EV strategy at large campuses (e.g., ERDC campus) to demonstrate opportunities for efficient and effective deployment of EVs.
- Completed the installation of energy star rated electric vehicle charging stations at USACE Headquarters and St. Louis District Headquarters.

Priority Strategies & Planned Actions

In FY21 and FY22 USACE will:

- Refine internal fleet goals to continue to drive incremental increases to alternative fuel and EV use.
- Continue to annually reevaluate the focus of USACE’s EV strategy and acquisition plan on zero emission vehicle (ZEV) and plug-in hybrid electric vehicle (PHEV)-associated charging infrastructure for fleet management and vehicle user communities.
- Continue to deploy low-speed small electric vehicles (LSEVs) and EVs at smaller projects sites (e.g., military installations) with higher adoption rates and use Baltimore District’s Washington Aqueduct as the model for other similar facilities within USACE.
- Continue to conduct the annual VAM analysis to streamline fleet operations, maintain mission capability, and support the identification of potential locations to install EV charging stations.
- Utilize the Federal Automotive Statistical Tool (FAST) report to identify locations of EV charging infrastructure installation locations. Identifying locations supports increases to the USACE EV fleet inventory and assists USACE employees planning their EV purchasing and operations.
- Make data-informed decisions about changes to GSA fleet composition and based on EV infrastructure locations.
- Identify the acquisition and replacement of GSA vehicles to mitigate funding challenges around overall implementation with Army and DOD guidance, specific to charging stations and EV infrastructure.

Implementation Summary: Cross-Cutting Operations

1. Sustainable Acquisition / Procurement

FY 2019 Sustainable Acquisition Progress:

95.5% of contract actions and 95.9% of obligations (in dollars), for a total of \$17.5 Billion in contract actions with statutory environmental requirements

FY 2020-FY 2021 Plan:

FY2020: 95.6% of contract actions and 96.0% of obligations (in dollars)

FY2021: 95.7% of contract actions and 96.1% of obligations (in dollars)

USACE’s overarching strategy and approach to sustainable acquisition and procurement is to incorporate sustainability clauses into as many contracts for goods and services as possible and applicable. USACE automates the monitoring of all USACE contract orders to determine whether sustainability clauses are required.

Implementation Status

USACE continues to focus on the implementation of its Sustainable Acquisition Clause Selection Tool and Compliance Assessment Tool to institutionalize sustainable procurement practices and streamline reporting. The Sustainable Acquisition Clause Selection Tool helps ensure appropriate sustainability clauses are included in contracts based on the types of goods and services being procured. The Compliance Assessment Tool automates monitoring of 100% of

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

USACE's contract orders and determines compliance status based on 12 sustainability clauses. In FY19 and FY20, USACE achieved the following:

- Exceeded FY19 bio-based contracting target of 1,020 bio-based contract actions valued at \$66 million. Actual awards of bio-based contracting actions totaled 2,136 at a value of \$10 billion.
- Deployed the Sustainable Acquisition Clause Selection Tool USACE-wide and provided four webinar training classes to 125 participants.
- Implemented feedback from training classes to continue to enhance the Sustainable Acquisition Clause Selection Tool by improving data mining, data analysis, and quality assurance capabilities.
- Expanded sustainable acquisition tracking/data mining in FY19/FY20.
- Developed the USACE Acquisition Instruction (UAI) supplement the Federal Acquisition Regulation (FAR) and prepared the data mining technique to apply to other clauses.

Priority Strategies & Planned Actions

In FY21 and FY22 USACE will:

- Achieve 0.1% annual improvements in the percent of contract actions and obligations (in dollars) for contract actions including statutory environmental requirements.
- Target 2,100 biobased-only contracts (estimated dollar value of \$10 billion) in FY21.
- Continue to train personnel involved in contract actions on use of the Sustainable Acquisition Clause Selection Tool and the Compliance Assessment Tool.
- Continue to implement and apply the data mining technique to other sustainable acquisition clauses and add more of the exemptions (i.e., remove commercial items, architecture and engineering, modifications to task orders).

2. Electronics Stewardship

FY 2019 Electronics Stewardship Progress:

100% of newly purchased or leased equipment met energy efficiency requirements

100% of electronic equipment disposed using environmentally sound methods*

**Reuse, donation, recycling, transfer, sale, or demanufacturing.*

USACE's overarching strategy and approach to promote energy efficiency and environmental stewardship of electronics, including acquisition, management, and disposal at end of life is to implement policies to ensure 100% compliance USACE-wide with electronics stewardship goals.

Implementation Status

USACE continues to implement policies to ensure 100% compliance USACE-wide with electronics stewardship goals. USACE ensures compliance with statutory requirements for purchase of energy efficient equipment by using the Army Computer Hardware Enterprise Software and Solutions (CHESS) vehicle, which builds in sustainable electronics requirements. USACE employs enterprise management to ensure energy efficiency, power management, and disposal requirements are met. In FY19 and FY20, USACE achieved the following:

- Continued to promote procurement preference for environmentally sustainable electronic products via contract agreements through the Defense Logistics Agency (DLA), GSA and Department of Army.
- Continued to implement policies to enable power management, duplex printing, and other energy efficient or environmentally sustainable features on all eligible agency electronic products.
- Continued to dispose of electronics via DLA and GSA, using certified recyclers.
- Analyzed the supercomputer HVAC system at the Engineering Research and Development Center facility in Vicksburg, MS to identify and implement improvements to the energy and water usage at this facility.

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

Priority Strategies & Planned Actions

In FY21 and FY22, USACE will:

- Maintain current management practices.
- Apply lessons learned from the improvements to the energy and water usage at the ERDC facility in FY19/FY20 to other data centers in USACE.

3. Greenhouse Gas Emissions

FY 2019 Scope 1&2 Greenhouse Gas (GHG) Emissions:

18.2% reduction from FY 2008

0.7% reduction from FY 2018

USACE's overarching strategy and approach for managing and reducing GHG emissions is driven across three sectors: facilities, vehicles, and vessels/equipment. Within facilities, USACE is driven by energy conservation and operational efficiency. Within vessels/equipment, the USACE is driven by routine maintenance, fuel efficiency upgrades, and non-road equipment reporting.

Implementation Status

USACE continues to observe annual variations in operational tempo resulting from natural events, such as floods and droughts, which have caused significant variations in USACE energy consumption and associated GHG emissions. For example, emergency pumping plants during flood-intensive years have been shown to cause up to 5% variation in annual Scope 1 & 2 GHG emissions for USACE. FY19 represented an anomalous year regarding flood control, with emissions due to pumping plants power and fuel increasing by 149% between FY18 and FY19. Despite these changes in operational tempo, in FY19 and FY20, USACE:

- Implemented the "Reduce the Footprint" policy and the Office of Management and Budget (OMB) Memorandum M-17-08 to determine the average Administrative Space Utilization rate across the Districts and set a threshold in which a "Get Well Plan" shall be implemented at the individual location to reduce the footprint and therefore, improve energy efficiency and reduce GHG emissions. The "Get Well Plan" is required for all Districts that exceed a 162 GSF/person space standard and details the plan for how to downsize space to meet compliance with this space per person standard.
- Studied the use of fuel blends of regular diesel and biodiesel such as B20, B15, B10, and B5 for use in floating plant. Study revealed no conversion of vessel engine or other components was required and any blend of fuel could be used and mixed interchangeably with other blends and regular diesel.

Priority Strategies & Planned Actions

In FY21 and FY22 USACE will:

- Continue to drive GHG reductions through facility energy conservation, increased alternative fuel use, plug-in EVs, and continued maintenance and fuel efficiency upgrades for vessels and equipment; and
- Continue to implement the "Reduce the Footprint" policy and the OMB Memorandum M-17-08 to reduce footprint and GHG emissions.

Agency Priorities and Highlights

NOTABLE PROJECTS AND HIGHLIGHTS

USACE formally recognizes and rewards exceptional performance by USACE individuals and teams demonstrating extraordinary achievement in the pursuit of EO 13834: Efficient Federal Operations goals. The award recipients demonstrate the significant achievement in implementing energy efficiency and sustainable solutions, to reduce impacts to the environment and surrounding communities and preserve the quality of the Nation's natural resources.

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

In the spirit of sustainability, USACE will recognize and celebrate the 2020 Sustainability Award winners in a virtual ceremony, reducing costs and eliminating petroleum consumption and GHG emissions.

Green Innovation Award: This award recognized the Lower Atchafalaya River Dredging and Ecosystem Restoration Horseshoe Bend Project Delivery Team Engineer Research and Development Center (ERDC), Vicksburg, MS. Beginning in 2002, strategic placement of the sediment dredged from Horseshoe Bend occurred at the open water placement area, which contributed to the development of an approximately 35 hectare island mid-river. Dredged sediment was strategically placed in mounds upriver of the island over 12 years. The mounded material was dispersed by the river's currents to naturally construct the unconfined peninsula over time. Environmental and climate change benefits were realized using this innovative placement practice. A New Orleans District and ERDC project team was formed to generate data and other information regarding ecosystem classification and mapping, floral and faunal composition of the island. Background data supporting future research efforts were also conducted to document environmental, economic, and social benefits being realized. The island is currently 43 hectare in size and supports over 80 plants and over 20 faunal species within four distinct habitat types. Our results demonstrated that Horseshoe Bend Island is providing four distinct habitat types supporting complex communities of vegetation, invertebrates, soil microbes, and higher organisms such as birds. Horseshoe Bend Island contains a wide variety of plants, including >85% native species, with species richness values exceeding observations from both traditional dredged materials supported and first reference areas. The design utilized at Horseshoe Bend Island resulted in landscape and landform characteristics (e.g., distance from shore, flooding regime) that support a large, thriving wading bird rookery. Horseshoe Bend Island also supports more invertebrate abundance and diversity than natural islands in the region that lack the new aquatic bed landforms resulting from the strategic placement of dredged materials. This project is consistent with Engineering with Nature practices that support more sustainable USACE practices, projects, and outcomes.

Sustainability Hero Award: This year's hero is Dr. Guillermo Riveros, Research Civil Engineer, Engineer Research and Development Center (ERDC), Vicksburg, MS for his work on the Overton Lock and Dam Pintle Socket Repair. Dr. Riveros developed and quickly deployed a method to repair steel structure fatigue cracks using fiber-reinforced polymers. His process allowed Overton Lock to continue in service until major repairs occur. The most affordable and environmentally sustainable mode of bulk transport is the waterways. Barges can carry more cargo than trains or trucks and have been proven to emit fewer emissions. However, over 60% of the steel structures associated with inland navigation within the United States have reached and exceeded their design life. It is not uncommon for traditional repair or replacement methods to result in outages anywhere from weeks to months. The application of Dr. Riveros' methodology to inland navigation structures supports sustainability by keeping open the most environmentally friendly means of transporting bulk goods, reducing material waste that would occur with traditional repair methods, and reducing the environmental costs to communities to re-route goods through land-based modes of transportation.

Green Dream Team Award: This award recognized exceptional leadership by Regional Sediment Management Regional Center of Expertise (RSM RCX) with Savannah (SAS) and Jacksonville (SAJ) Districts, South Atlantic Division (SAD) for the Beneficial Use of Dredge Material at Jekyll Island, GA. The Jekyll Creek Beneficial Use Pilot Project is a collaboration between USACE (RSM RCX, SAS, SAJ), the Georgia Department of Natural Resources (GA DNR), and federal agencies, stakeholders, academia, and industry to develop both environmentally and economically sustainable beneficial use of dredged material solutions for maintaining navigation projects in the State of Georgia, and to support coastal resilience throughout SAD. The team developed and successfully executed two innovative beneficial use strategies consistent with Regional Sediment Management (RSM) principles, which are Open Water Dispersal (OWD) and Thin Layer Placement (TLP). SAD enhanced 5 acres of marsh and maintained over 200,000 cubic yards of sediment in the coastal system to support marsh, beach, and other coastal habitats that would have otherwise been removed. TLP is a technique with great interest from the coastal community to combat land subsidence, sustain marshes, reduce storm impacts, and enhance coastal

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

resiliency. Refinement of TLP through project implementation in coordination with environmental agencies will be critical in advancing the technique for larger-scale applications. Beneficial use of silt and mud materials is challenging with limited opportunities, which is a major reason why only approximately half of all USACE dredged material is not beneficially re-used. The strategies were the first to be executed by USACE in SAD and a first for Georgia. These environmentally acceptable and economically efficient strategies provide opportunities for future RSM applications across SAD and other USACE divisions. Incorporation of these two placement strategies could help the USACE Navigation Program take a big step towards the goal of 100% beneficial use of dredged material. The projects included extensive monitoring plans developed by the collaborative team to document results and promote lessons learned to build better projects in the future.

In addition, the Renewable Natural Resources Foundation recognized the Engineering with Nature (EWN) initiative with the **2019 Outstanding Achievement Award**. The EWN initiative enables more sustainable delivery of economic, social, and environmental benefits associated with water resources infrastructure. It is a cross-cutting program of activities resulting from collaboration among multiple Civil Works Research, Development and Technology programs and non-USACE partners. The EWN initiative was nominated for the award by the Coasts, Oceans, and Ports and Rivers Institute Coastal Zone Management Committee, an institute of the American Society of Civil Engineers.

Acronyms

ASA(CW)	Assistant Secretary of the Army for Civil Works
BPA	Bonneville Power Administration
CEM	certified energy manager
CHES	Computer Hardware Enterprise Software and Solutions
CNG	compressed natural gas
CRAFT	Corps of Engineers Reduced and Abridged FEMP Tool
C&D	construction and demolition
DA	Department of Army
DLA	Defense Logistics Agency
DOD	Department of Defense
ECM	energy conservation measure
EISA	Energy Independence and Security Act of 2007
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EO	Executive Order
ERDC	Engineer Research and Development Center
ERGO	Environmental Review Guide for Operations
ESPC	energy savings performance contract
EV	electric vehicle
EWN	Engineering with Nature
FAR	Federal Acquisition Regulation
FAST	Federal Automotive Statistical Tool
FEMP	Federal Energy Management Program
FOA	field operating activity
GHG	greenhouse gas
GSA	General Services Administration
GSF	gross square footage
HECSA	Humphreys Engineer Center Support Activity
HQUSACE	Headquarters US Army Corps of Engineers

U.S. Army Corps of Engineers
2020 Sustainability Report and Implementation Plan

ISWM	Integrated Solid Waste Management
LEED	Leadership in Energy and Environmental Design
LSEV	low-speed small electric vehicle
MGal	Million Gallons
MILCON	military construction
MPG	miles per gallon
MSC	major subordinate command
NAD	North Atlantic Division
OMB	Office of Management and Budget
OPORD	Operations Order
O&M	operations and maintenance
PHEV	plug-in hybrid electric vehicle
PPA	power purchase agreement
REMIS	Real Estate Management Information System
REC	renewable energy certificate
SFB	sustainable federal building
SHEP	Savannah Harbor Expansion Project
SRIP	Sustainability Report and Implementation Plan
SSC	Strategic Sustainability Committee
UAI	USACE Acquisition Instruction
UESC	utility energy service contract
UFC	unified facilities criteria
ULA	USACE Logistics Agency
USACE	U.S. Army Corps of Engineers
VAM	vehicle allocation methodology
VURB	Vehicle Utilization Review Board
WES	Waterways Experiment Station
ZEV	zero emission vehicle