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2018 LM Site Sustainability Plan

December 2017

U.S. DEPARTMENT OF ENERGY | Legacy Management

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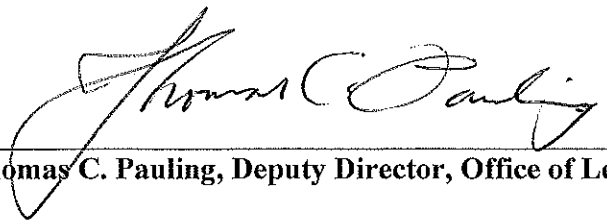
Document History

Date	Description of Changes
December 2017	Updated to include fiscal year 2017 performance and fiscal year 2018 planned activities.



12/14/2017

Thomas C. Pauling, Deputy Director, Office of Legacy Management **Date**

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Abbreviations

AFVs	alternative fuel vehicles
AS&T	Applied Studies and Technology
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
C&D	construction and demolition debris
DLA	Defense Logistics Agency
DOE	U.S. Department of Energy
DRRP	Dolores River Restoration Partnership
DRUM	Defense-Related Uranium Mines
EISA	Energy Independence and Security Act
EM	Office of Environmental Management
EMS	Environmental Management System
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPEAT	Electronic Product Environmental Assessment Tool
ESPC	energy savings performance contract
FTE	full-time equivalent
FY	fiscal year
GHG	greenhouse gas
GP	Guiding Principles
GSA	U.S. General Services Administration
GSF	gross square feet
ILA	industrial, landscaping, and agricultural
ISO	International Standard Organization
LM	Office of Legacy Management
LMBC	Legacy Management Business Center
LMS	Legacy Management Support
LSEVs	low-speed electric vehicles
RECs	renewable energy certificates
SOARS	System Operation and Analysis at Remote Sites
SPO	Sustainability Performance Office
SSP	Site Sustainability Plan
THIRA	Threat and Hazard Identification Risk Analysis

1.0 Executive Summary

1.1 Purpose and Scope

1.1.1 Site Management Vision

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) embodies environmental stewardship excellence while performing its primary mission of managing DOE post-closure legacy sites. Overall, LM manages, maintains, or has interest in more than 89,000 acres at 92 sites in 28 states and Puerto Rico. The histories of the legacy sites vary, as do the regulatory regimes under which the sites are managed; examples of the regulatory frameworks include Comprehensive Environmental Response, Compensation, and Liability Act; DOE Defense Decontamination and Decommissioning Program; Formerly Utilized Sites Remedial Action Program; Resource Conservation and Recovery Act; and Uranium Mill Tailings Radiation Control Act. Additionally, LM manages five radiometric calibration facilities; administers the Defense-Related Uranium Mines Program to verify and validate the condition of abandoned uranium mines on federal public land managed by the U.S. Bureau of Land Management and the U.S. Forest Service; manages 25,000 acres in Colorado that encompass the Uranium Leasing Program; retains records at the Legacy Management Business Center (LMBC) in Morgantown, West Virginia; and conducts office work at multiple locations.

LM protects human health and the environment, conserves natural resources, enhances ecosystem recovery, and reduces LM's carbon footprint at a program-wide level as well as on a site-specific basis. To succeed at managing the large number of sites, LM employs comprehensive asset, information, data, and records management systems and integrates these systems with the LM-wide Environmental Management System (EMS). LM management is committed to continuously improving site sustainability and environmental performance, and demonstrates this commitment by incorporating the EMS life-cycle continuum into the LM mission. (See Attachment 1 for a copy of LM's Environmental Policy).

LM's overarching goals are to (1) protect human health and the environment; (2) preserve, protect, and share records and information; (3) safeguard former contractor workers' retirement benefits; (4) sustainably manage and optimize the use of land and assets; (5) sustain management excellence; and (6) engage the public, governments, and interested parties. LM management is committed to enhancing sustainable environmental performance in LM site management.

LM operates its EMS jointly with its Legacy Management Support (LMS) contractor, and both partners place a priority on sustainability while executing the LM mission and achieving the LM goals.

Note

In this document, a reference to "LM" represents both LM and the LMS contractor unless specifically noted otherwise.

1.1.2 Planning Synopsis, People, and Processes

This Site Sustainability Plan (SSP) outlines the U.S. Department of Energy (DOE) Office of Legacy Management's (LM's) sustainability plans and details LM's progress in meeting sustainability goals. The LM *2016–2025 Strategic Plan* outlines management strategies and goals to sustainably manage LM's legacy sites, land, and assets. LM achieves these goals by conserving resources; managing sites in compliance with applicable compliance obligations; implementing infrastructure improvements; and operating onsite renewable-energy-generating systems.

The EMS covers both environmental compliance and sustainability aspects. The environmental compliance aspect helps LM use its finite resources wisely, to minimize waste and adverse environmental impacts, and to adhere with compliance obligations that protect the environment, public and worker health, and resources. The sustainability side enables LM to implement sustainable stewardship practices that enhance the protection and conservation of air, water, land, and other natural and cultural resources affected by LM operations. Implementing the EMS is integral to LM's mission and to achieving excellence in environmental stewardship.

1.1.3 Successes and Challenges, Including Traditional Triple Bottom Line Activities

LM successfully achieved or exceeded 76% of the fiscal year (FY) 2017 sustainability goals and targets. LM did not obtain the goals in the following areas: petroleum, alternative fuel, construction and demolition waste, and energy intensity. LM is a small DOE organization however, and so it contributes only a small proportion to DOE's overall sustainability goals.

By FY 2025, LM is projected to assume responsibility for 26 additional legacy sites and will adjust its EMS accordingly. As LM receives more sites and additional scope, it will employ more workers, occupy more workspace, operate more vehicles, conduct more travel, consume more fuel, purchase more personal property, and generate more waste. Conditions of sites at transfer could vary greatly, making it difficult to predict their impact on meeting the sustainability goals and targets. LM will monitor the impacts to meeting sustainability goals and targets as new sites are added and scope increases.

As identified in the "Site Management Vision" section, LM has multiple overarching goals. Underlying these overarching goals are LM's "triple bottom line" activities that focus on social responsibility, economic prosperity, and environmental stewardship. For social responsibility, LM focuses on both staff and public communication and safety. For economic prosperity, LM promotes business excellence by being fiscally responsible and using best business practices. For environmental stewardship, LM consults with regulatory agencies and other stakeholders regarding its compliance with environmental laws, regulations, and agreements; its support for environmental justice; and its general consideration of the environmental impacts for all work being performed. LM's climate-related advancements include gaining a better understanding of climate science and developing vulnerability assessments. Climate-related challenges include considering resilience in operations, policy, and workforce protocols and further identifying climate risks for LM sites.

1.1.4 Funding

LM identifies the funds needed for meeting sustainability goals and targets and related activities. With a 5-year look-ahead budget plan, LM identifies the major sustainability goals and related activities (e.g., water audits and annual reporting events) and projects that will be necessary to achieve the goals. LM funds long-term sustainability projects in its site-specific budgets. The Environmental Compliance staff closely coordinates with the site-specific project staff to identify project costs and provide input to this plan and any other related budget calls.

1.1.5 Summary Table of Goals/Targets

LM's reporting consists of both the FY 2017 performance data entry in the DOE Sustainability Dashboard and this 2018 SSP. Reported performance is based on the output provided by the LM Sustainability Dashboard Comprehensive Scorecard dated December 12, 2017 (see Attachment 2).

Table 1. Goal Summary Table

DOE Goal	Current Performance Status	Performance & Plans
Multiple Categories		
50% Scope 1 & 2 GHG emissions reduction by FY 2025 from a FY 2008 baseline.	Interim Target: −25% Current Performance: −47.7%	LM has exceeded the interim target. LM will continue to reduce energy, water, and fleet use and produce RE or purchase RECs to the extent practical to meet the goal.
25% Scope 3 GHG emissions reduction by FY 2025 from a FY 2008 baseline (2017 target: 9%).	Interim Target: −9.0% Current Performance: −20.2%	LM exceeded this target. LM will strive to maintain goal status and further reduce these emissions.
Energy Management		
25% energy intensity (Btu per gross square foot) reduction in goal-subject buildings by FY 2025 from a FY 2015 baseline.	Interim Target: −5.0% Current Performance: −3.0 %	LM did not meet the interim target. LM will continue to pursue projects that will further reduce its energy intensity, including replacing current grid electricity with renewable sources and purchasing bundled electricity where it is cost effect.
EISA Section 432 continuous (4-year cycle) energy and water evaluations.	LM completed required 4-year cycle energy and water evaluations.	LM has met this goal for FY 2017. LM will conduct EISA water evaluations at the Tuba City, Arizona, Disposal Site. LM will conduct EISA energy evaluations on the Tuba City disposal site; LM office at Grand Junction, Colorado; and LMBC.

Table 1. Goal Summary Table (continued)

DOE Goal	Current Performance Status	Performance & Plans
Meter all individual buildings for electricity, natural gas, steam and water, where cost-effective and appropriate.	LM has met this goal with 93.3% of its electrical usage individually metered. 100% of natural gas usage is metered. 85% of potable water usage is metered.	LM has met this goal for FY 2017. LM will provide the Weldon Spring, Missouri, Site LM site manager information on metering requirements for the new construction project.
Water Management		
36% potable water intensity (Gal per gross square foot) reduction by FY 2025 from a FY 2007 baseline.	Interim Target: 20% Current Performance: 93.3%	LM has exceeded the interim target. LM will ensure current practices to reduce potable water intensity are maintained and will work toward reducing potable water intensity.
30% water consumption (Gal) reduction of industrial, landscaping, and agricultural (ILA) water by FY 2025 from a FY 2010 baseline.	Interim Target: 14% Current Performance: 99.6%	LM has exceeded the interim target. LM will ensure current practices to reduce ILA water use are maintained and will work toward reducing ILA water use.
Waste Management		
Divert at least 50% of non-hazardous solid waste, excluding construction and demolition debris.	Interim Target: 50% Current Performance: 51.1%	LM exceeded the interim target. LM will continue to promote the LM guidance developed for project managers and site leads on ways they can reduce, reuse, and recycle nonhazardous solid waste on their projects and at their sites.
Divert at least 50% of construction and demolition materials and debris.	Interim Target: 50% Current Performance: 13.1%	LM did not meet the interim target. LM will continue to promote the LM guidance developed for project managers on ways they can reduce, reuse, and recycle construction and demolition materials and debris on their projects.
Fleet Management		
30% reduction in fleet-wide per-mile GHG emissions reduction by FY 2025 from a FY 2014 baseline.	Interim Target: −4.0% Current Performance: −12.6%	LM has exceeded the interim target. LM will continue to evaluate the use of low-GHG-emitting vehicles in the fleet. Additionally, LM will continue to acquire alternatively fueled vehicles when they are available considering the intended use for the vehicle.
20% reduction in annual petroleum consumption by FY 2015 relative to a FY 2005 baseline; maintain 20% reduction thereafter.	Interim Target: −20.0% Current Performance: 2.0%	LM did not meet the interim target. LM will continue to encourage sites to fuel any E-85-capable vehicle in our fleet with E-85 when it is available. Additionally, LM will encourage trip consolidation and video teleconferencing to help reduce conventional fuel use.

Table 1. Goal Summary Table (continued)

DOE Goal	Current Performance Status	Performance & Plans
10% increase in annual alternative fuel consumption by FY 2015 relative to a FY 2005 baseline; maintain 10% increase thereafter.	Interim Target: 10% Current Performance: −22.6%	LM did not meet the interim target. LM will continue to provide maps for vehicles to show fuel stations with E-85 fuel and instructions indicating that LM should make every attempt to fuel up with E-85 when it is available.
75% of light duty vehicle acquisitions must consist of alternative fuel vehicles (AFV).	71% of light duty acquisitions were alternative fuel vehicles.	LM did not meet the goal. LM will evaluate AFVs for all light-duty vehicle acquisitions as long as it does not negatively impact the mission.
50% of passenger vehicle acquisitions consist of zero emission or plug-in hybrid electric vehicles by FY 2025.	LM does not have any passenger vehicles.	This goal is not applicable to LM. LM will evaluate the need for passenger automobiles during replacement cycles and for all new acquisitions. If the need arises, it will consider zero-emission electric vehicles at that time.
Clean & Renewable Energy		
"Clean Energy" requires that the percentage of an agency's total electric and thermal energy accounted for by renewable and alternative energy shall be not less than 25% by FY 2025 and each year thereafter.	Interim Target: 10% Current Performance: 49.4%	LM exceeded the interim target. LM will ensure the current use of clean and renewable energy is maintained to the extent practical to continue meeting the 2025 goal that 25% of LM electrical energy comes from renewable sources and 10% of total energy comes from clean sources.
"Renewable Electric Energy" requires that renewable electric energy account for not less than 30% of a total agency electric consumption by FY 2025 and each year thereafter.	Interim Target: 30% Current Performance: 50.3%	LM exceeded the interim target. LM will operate and maintain existing RE systems, pursue installation of new RE systems where cost-effective and allowed under the site agreements, and continue to purchase RECs to ensure that the percentage of renewable energy use does not fall below the goal by 2025.
Green Buildings		
At least 17% (by building count) of existing buildings greater than 5000 gross square feet to be compliant with the revised Guiding Principles for HPSB by FY 2025, with progress to 100% thereafter.	Interim Target: 15.0% Current Performance: 45.5% by building count and 15.5% by GSF.	LM exceeded the interim target. LM will continue assessing and prioritizing buildings greater than 5000 GSF for their potential to achieve the 2025 goal.
Net Zero Buildings: 1% of the site's existing buildings above 5000 gross square feet intended to be energy, waste, or water net-zero buildings by FY 2025.	LM has not identified any existing buildings that were likely candidates for meeting energy, waste, or water net-zero goals yet.	LM has not met this goal yet. LM will assess and prioritize existing buildings and any incoming buildings greater than 5000 GSF for potential to become net-zero buildings.

Table 1. Goal Summary Table (continued)

DOE Goal	Current Performance Status	Performance & Plans
Net Zero Buildings: All new buildings (>5000 GSF) entering the planning process designed to achieve energy net-zero beginning in FY 2020.	LM has not met this goal yet. LM has no new buildings (>5000 GSF) entering the planning process in FY 2020 or beyond.	LM has not met this goal yet. LM will evaluate designing new buildings to achieve energy net-zero requirements if any enter the planning process in FY 2020 or beyond.
Increase regional and local planning coordination and involvement.	Most of LM's regional and local planning efforts are focused on ecosystem, watershed, and environmental management. LM continues to meet its regional and local planning goals through numerous ecological and environmental collaborations.	LM has met this goal. LM plans to continue its regional and local planning efforts, primarily through partnering activities with other agencies, tribes, and nonprofit organizations.
Acquisition & Procurement		
Promote sustainable acquisition and procurement to the maximum extent practicable, ensuring BioPreferred and biobased provisions and clauses are included in 95% of applicable contracts.	Interim Target: 95% Current Performance: 100%	LM exceeded the interim target. LM will continue to promote sustainable acquisitions and procurement to the maximum extent practical and ensure that 95% of new contract actions, under both new and existing contracts, contain language that requires the supply or use of products and services that are sustainable.
Measures, Funding, & Training		
Annual targets for performance contracting to be implemented in FY 2017 and annually thereafter as part of the planning of Section 14 of EO 13693.	LM has not identified any projects that were large enough to meet the criteria for using an ESPC	LM met this goal. LM will continue to evaluate new projects for ESPC ENABLE initiatives during the planning process.
Electronic Stewardship		
Purchases – 95% of eligible acquisitions each year are EPEAT-registered products.	Interim Target: 95% Current Performance: 100%	LM exceeded the interim target. LM will continue to acquire electronic products that meet or exceed purchasing specifications and standards required for federal agencies.
Power management – 100% of eligible PCs, laptops, and monitors have power management enabled.	Interim Target: 100% Current Performance: 100%	LM met the interim target. LM will continue to maintain 100% compliance on all eligible systems.
Automatic duplexing – 100% of eligible computers and imaging equipment have automatic duplexing enabled.	Interim Target: 100% Current Performance: 100%	LM met the interim target. LM will continue to maintain 100% compliance on all eligible systems.
End of Life – 100% of used electronics are reused or recycled using environmentally sound disposition options each year.	Auto from Comprehensive Scorecard Interim Target: 100% Current Performance: 100% LM met this goal. LM reused or recycled 100% of used electronics.	LM met the interim target. LM will continue to reuse or recycle used electronics in an environmentally sound manner that avoids disposal of electronics as waste.

Table 1. Goal Summary Table (continued)

DOE Goal	Current Performance Status	Performance & Plans
Data Center Efficiency. 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.	LM has two data centers. Their power usage effectiveness scores were 1.08 at the LMBC in Morgantown, West Virginia, and 1.14 at the LM office in Grand Junction, Colorado.	LM exceeded the interim target. LM will monitor and maintain the power usage effectiveness ratio within the target range.
Organizational Resilience		
Discuss overall integration of climate resilience in emergency response, workforce, and operations procedures and protocols.	LM has integrated climate considerations into strategic and scientific study plans and emergency management policies and protocols. LM began a vulnerability screening for the Monticello, Utah, Site in accordance with the DOE Vulnerability Screening Guidance.	LM will complete the Monticello site vulnerability screening and begin evaluating other sites, continue to include climate considerations and extreme weather events in emergency and project-planning efforts, and continue to work on long-term disposal cell cover and remedy performance studies.

Abbreviations:
AFV = alternative fuel vehicles
EISA = Energy Independence and Security Act
ESPC = energy savings performance contract
gal = gallon
GHG = greenhouse gas
GSF = gross square feet
HPSB: high-performance sustainable building
ILA = industrial, landscaping, and agricultural
LMBC = Legacy Management Business Center
RE = renewable energy
RECs = renewable energy certificates

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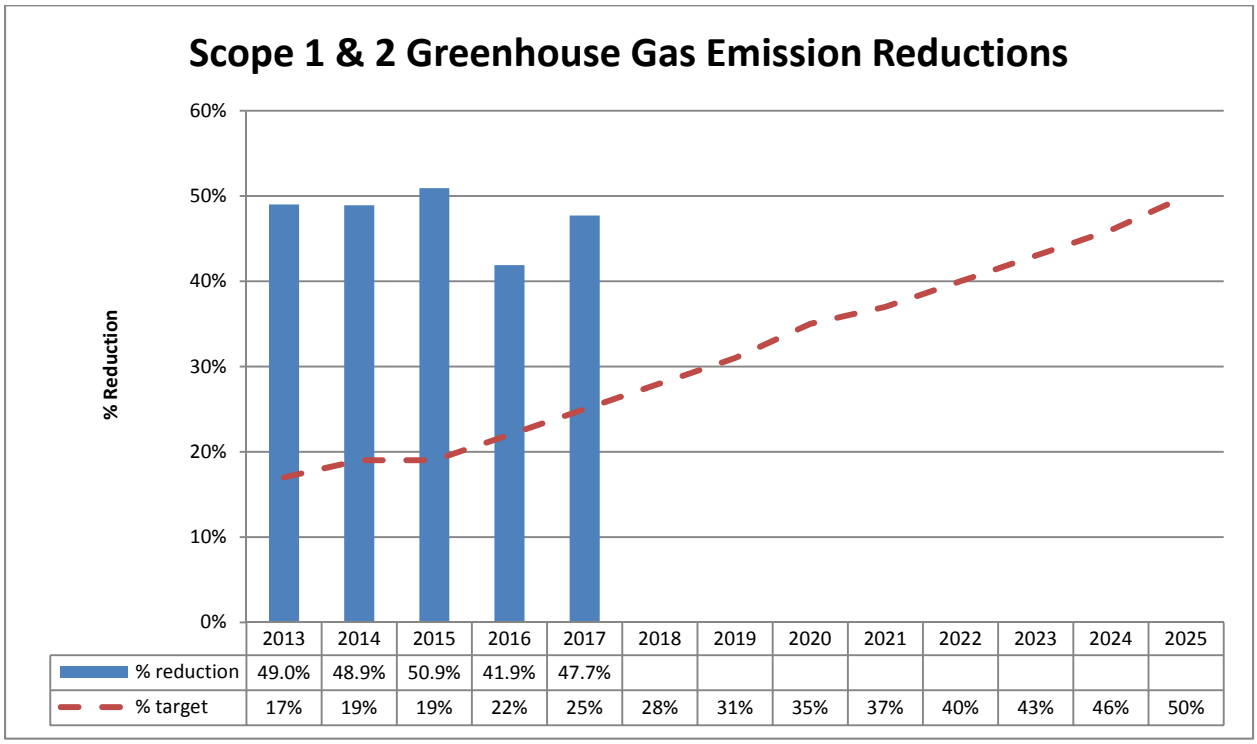
2.0 Energy

2.1 Goal 1.1: 50% Scope 1 & 2 GHG reduction by FY 2025 from a FY 2008 baseline Performance

2.1.1 Scope 1 & 2 GHG

LM exceeded the fiscal year (FY) 2017 interim target of 10% reduction from a FY 2008 baseline. LM reduced Scope 1 and 2 GHG emissions by 47.7%.

LM continued to exceed the annual interim reduction target as shown in Figure 1, which presents data from FY 2013 through FY 2017 and shows annual Scope 1 & 2 GHG emissions progress toward the FY 2025 goal.



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
% reduction	49.0%	48.9%	50.9%	41.9%	47.7%								
% target	17%	19%	19%	22%	25%	28%	31%	35%	37%	40%	43%	46%	50%

Figure 1. Scope 1 & 2 GHG Emission Reductions vs. Annual Fiscal Year Targets

The increase in LM's scope and number of sites from the present to FY 2025 may affect LM's ability to achieve the FY 2025 goal.

As a best management practice, LM considers reductions in GHG emissions with project-planning tools (e.g., Project/Activity Evaluation forms, Statements of Work). These tools were used in planning the optimization of the groundwater treatment system at the Fernald Preserve, Ohio, Site, which will help reduce GHG emissions.

LM purchased national renewable energy certificates (RECs) this year and is phasing out locally purchased RECs. This is allowing LM to make certain that purchased RECs meet Executive Order (EO) 13693 requirements so RECs can be credited towards GHGs.

Remote building energy evaluations were utilized at the Monticello, Utah, Disposal and Processing Sites and the Shiprock, New Mexico, Disposal Site by monitoring electricity usage through the System Operation and Analysis at Remote Sites (SOARS) system, thus reducing GHG emissions related to traveling to and from the site.

2.1.2 Scope 1 & 2 GHG Planned Activities and Projected Performance

With the following planned activities, LM expects to continue meeting Scope 1 and 2 GHG reduction goals:

- Purchase sufficient RECs, along with the RECs generated by onsite renewable energy installations.
- Assure all new leases over 10,000 GSF include requirements for lessors to disclose energy conservation and carbon emissions data.
- Construct a new building at the Weldon Spring, Missouri, Site, with occupancy taking place in FY 2020.
- Optimize the groundwater treatment system at the Fernald Preserve site by right-sizing the treatment capacity, which will reduce energy use. Additionally, the building heating system is being right-sized and the existing lighting is being replaced with LED lighting, which will also reduce energy use.
- Track energy consumption and carbon emissions data for all fully serviced building leases over 10,000 GSF and provide feedback to facility leads.

2.2 Goal 2.1: 25% energy intensity (British Thermal Units [Btu] per gross square foot [GSF]) reduction in goal-subject buildings, achieving 2.5% reductions annually, by FY 2025 from a FY 2015 baseline

2.2.1 Energy Intensity Performance Status

LM did not meet the FY 2017 interim target of 5% reduction from a FY 2015 baseline. LM decreased energy intensity by 3.0%.

Despite the 30% increase in full-time equivalent (FTE) employees over the last 3 years, LM was still able to decrease energy intensity by 3%, as shown in Figure 2. The increase in LM's scope and number of sites between now and 2025 may continue to affect LM's ability to achieve this goal.

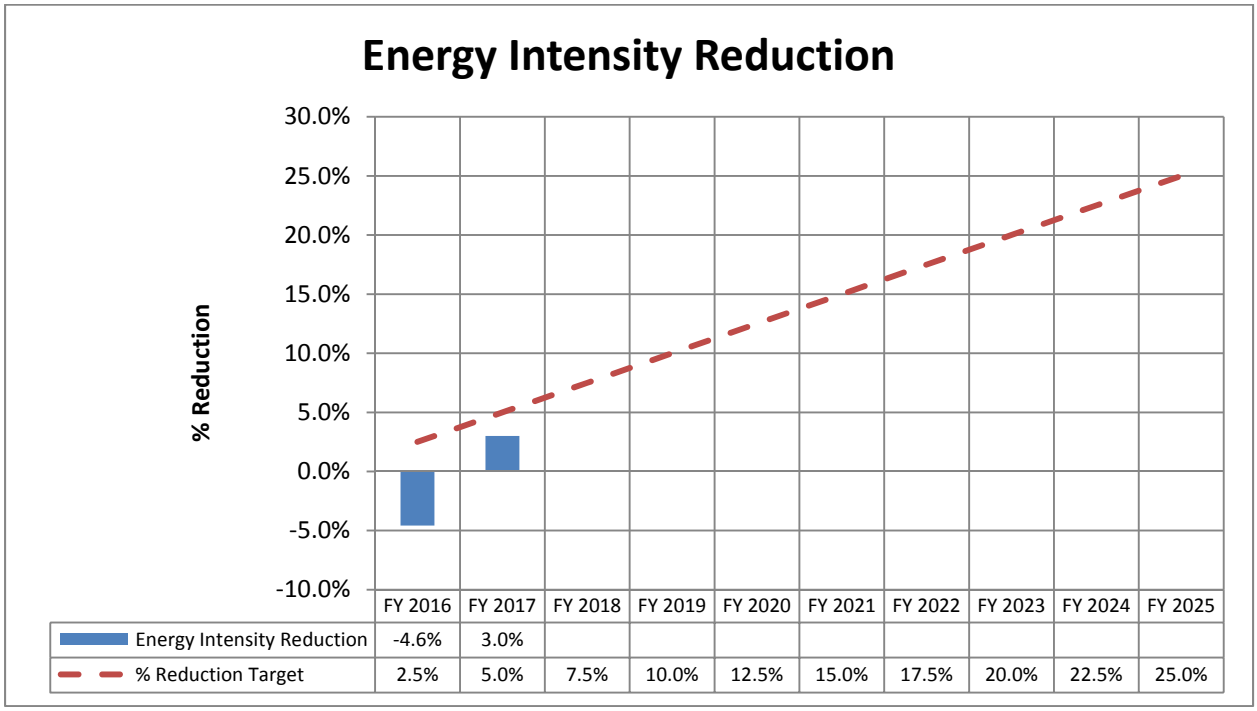


Figure 2. Energy Intensity Reduction

LM implemented the following best management practices:

- LM considers reductions in energy intensity with project-planning tools (e.g., Project/Activity Evaluation forms, Statements of Work, and evaluating projects for possible additions of renewable energy).
- Solar panel capacity was increased on two SOARS installations.

The LM office at Grand Junction, Colorado, has seen relatively rapid FTE employee growth over the past 2 years, filling all open offices. To accommodate more people within the same footprint, larger offices have been split up into cubicles, visitor offices were made into permanent offices, and other creative solutions were implemented.

LM excluded buildings from the energy intensity performance calculations that meet the exclusion criteria defined in *Guidelines for Establishing Criteria for Excluding Buildings* (see Attachment 3, "LM Excluded Building Certification Letter").

2.2.2 Energy Intensity Planned Actions and Projected Performance

LM will continue to investigate ways to reduce energy intensity. In addition, LM will perform the following planned activities:

- Assess newly acquired buildings, including those at recently transitioned sites, to determine if energy evaluation and retrocommissioning requirements are applicable, especially if the buildings are used by non-LM entities. This will help LM determine if these buildings will be added into LM's energy use data.
- Investigate ways to reduce energy in goal-excluded (not covered) buildings in FY 2018. Although excluded from tracking, improvements in those buildings can still be included in energy intensity calculations.

In addition, LM will be developing a siting plan to evaluate (1) whether the current LM office space and locations are adequate for current and future growth of both LM and contractor staff based on the current mission; and (2) whether there may be more efficient or cost-effective alternatives that LM should consider with respect to each current LM office location. The results of this siting plan may help identify additional measures LM can use to optimize space.

2.3 Goal 2.3: EISA Section 432 Continuous Evaluations

2.3.1 EISA Evaluations Performance Status

LM met this goal. LM conducted Energy Independence and Security Act (EISA) Section 432 energy and water evaluations. The LM Energy team evaluated the Monticello disposal and processing sites and the Shiprock disposal site in FY 2017 and submitted evaluation reports which provided results and recommendations to the site leads and managers for consideration.

The LM Water Conservation team evaluated the Grand Junction disposal/processing site and Rifle, Colorado, Processing (Old) Site in FY 2017. During the desk evaluations, staff assessed water use data and evaluated the opportunity for water use improvements. The final evaluation reports are still in progress.

As a best management practice, LM completes water and energy evaluations during regularly scheduled site inspections or condition assessment surveys, when feasible. This reduces the number of needed trips and conserves natural resources (especially fuel).

2.3.2 EISA Evaluations Planned Actions and Projected Performance

LM will continue to evaluate sites on a rotating basis to ensure that 100% of the applicable sites are evaluated every 4 years to meet the requirements of EISA Section 432. In addition, LM will conduct the following planned activities:

- Perform an energy evaluation at the Tuba City disposal site.
- Perform an energy overview of the leased LM office at Grand Junction and the LMBC.
- Combine evaluations with condition asset surveys when possible.
- Benchmark covered facilities with Energy Star Portfolio Manager and ensure data is accessible to the DOE Sustainability Performance Office (SPO).

2.4 Goal 2.3: Metering Status: Meter all individual buildings for electricity, natural gas, steam and water, where cost-effective and appropriate.

2.4.1 Metering Performance Status

LM has met this goal with 93.3% of its electrical usage individually metered as of FY 2017. This includes buildings and processes. Here is a summary of LM's metering status for appropriate Energy Policy Act of 2005 (EPAct 2005) buildings:

- 100% of LM's natural gas usage is individually metered.
- 85% of LM's potable water usage is metered using standard meters. The remainder is purchased and trucked onsite, as needed.

LM's electric usage is metered where it is cost effective. LM has seven small buildings that are not individually metered as it was not cost effective to meter those buildings and they are less than 5000 square feet and thus exempt from the requirements of the Federal Building Metering Guidance document.

LM used metering information for benchmarking, reporting, system diagnostics and maintenance, and measurement and verification of savings. However, none of the projects LM has implemented to reduce energy or water savings were financed under an energy savings performance contract (ESPC), so there is not a statutory requirement to conduct measurement and verification for them.

LM implemented the following best management practices:

- The LMS certified energy manager visited the LMBC to investigate the best method for determining the LMBC data center's power usage effectiveness. Additional metering on the data center was recommended.
- LM tracked water deliveries to the one site where it was not cost-effective to install a water distribution system with a standard meter.

2.4.2 Metering Planned Actions and Projected Performance

LM expects to continue metering buildings where it is cost effective: In addition, LM will perform the following planned activities:

- LM will provide Weldon Spring site personnel information on metering requirements for the new construction.
- Investigate U.S. Environmental Protection Agency's (EPA) Green Button initiative to provide customers with utility usage information, as well as any other demand-side management programs offered by utility companies. If the utility company has implemented the Green Button initiative, that information would provide a more comprehensive look at utility use throughout the day, thus providing possible identification of opportunities to reduce demand and energy usage.

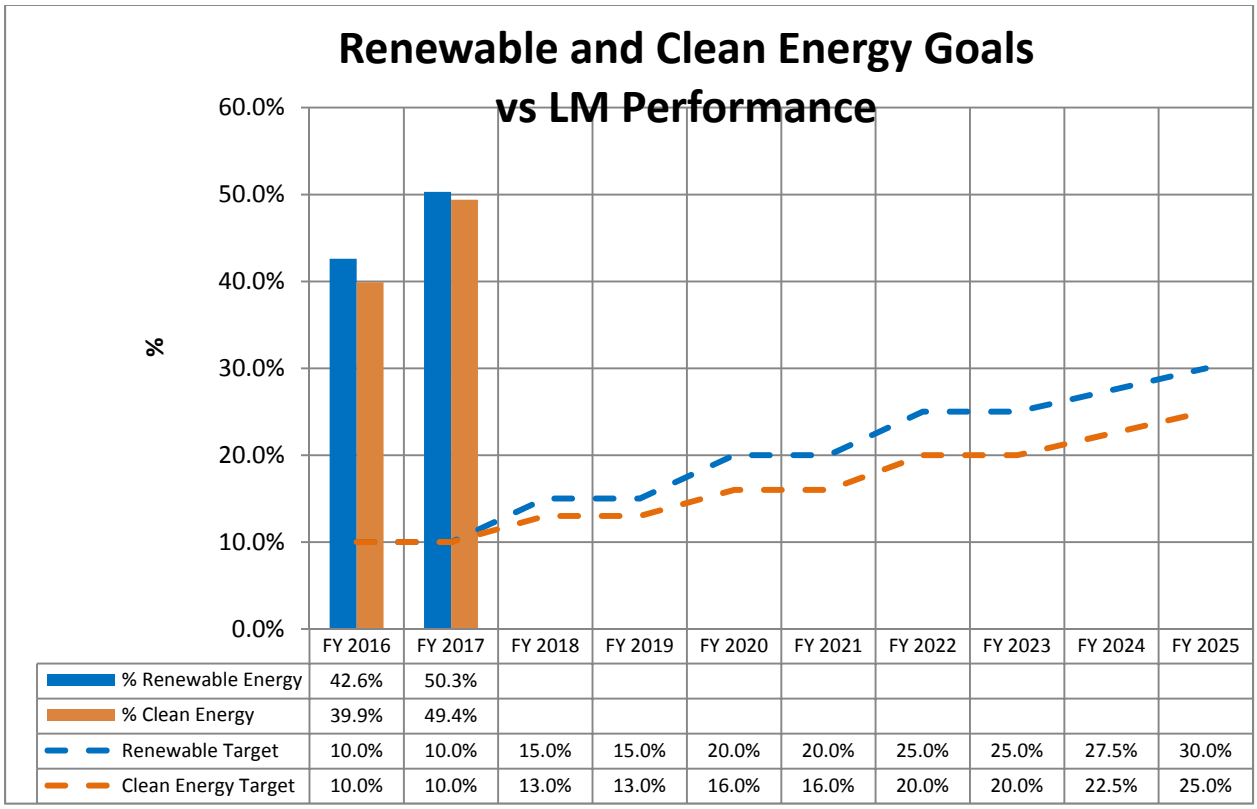
- Install metering devices (either advanced or standard) in each building, in other site facilities, and on site grounds to measure electricity, natural gas, and water use to the maximum extent practical and when cost effective.
- Provide annual utility usage from metering to site and facility leads so they can see utility performance and make changes, if cost effective, to improve efficiencies.
- Explore additional metering in the LMBC data center.

3.0 Clean and Renewable Energy

3.1 Goal 3.1: "Clean Energy" requires that the percentage of an agency's total electric and thermal energy accounted for by renewable and alternative energy shall be not less than: 10% in FY 2017, working towards 25% by FY 2025.

3.1.1 Clean Energy Performance Status

LM exceeded the FY 2017 interim target of 10% for clean energy. LM's performance was 49% for clean energy. Figure 3 shows both renewable and clean energy performance.



	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
% Renewable Energy	42.6%	50.3%								
% Clean Energy	39.9%	49.4%								
Renewable Target	10.0%	10.0%	15.0%	15.0%	20.0%	20.0%	25.0%	25.0%	27.5%	30.0%
Clean Energy Target	10.0%	10.0%	13.0%	13.0%	16.0%	16.0%	20.0%	20.0%	22.5%	25.0%

Figure 3. Renewable and Clean Energy Performance

The main change in FY 2017 was that LM entered into a contract with the Defense Logistics Agency (DLA) to purchase RECs. This will allow LM to provide the source, type, age, and certification of the RECs as required by EO 13693.

3.1.2 Clean Energy Planned Actions and Projected Performance

The number of RECs purchased from DLA will be reviewed and adjusted in order to continue to meet the clean energy goal.

3.2 Goal 3.2: "Renewable Electric Energy" requires that renewable electric energy account for not less than 10% of a total agency electric consumption in FY 2017, working towards 30% of total agency electric consumption by FY 2025.

3.2.1 Renewable Electric Energy Performance Status

LM exceeded the FY 2017 interim target of 10%. LM's performance was 50% for renewable electric energy.

As a best management practice, LM entered in a contract with DLA to purchase RECs. This will allow LM to provide the source, type, age, and certification of the RECs as required by EO 13693.

3.2.2 Renewable Electric Energy Planned Actions and Projected Performance

The number of RECs purchased from DLA will be reviewed and adjusted in order to continue to meet the renewable electric energy goal.

4.0 Water

4.1 Goal 4.1: Potable Water Use Intensity Reduction

4.1.1 Potable Water Use Intensity Performance Status

LM met the FY 2017 interim target to reduce water intensity by 20% at all LM goal subject sites. As shown in Table 2, LM reduced its water intensity by 93.3% compared to the baseline year of FY 2007.

Table 2. Water Intensity Comparison Using LM Water Use and DOE Sustainability Dashboard Gross Square Footage

Fiscal Year	GSF (LM water use only)	GSF (dashboard[a])	Potable Water Use (gallons)	Potable-Water WI (gallons/GSF)		Potable-Water WI Percent Change	
				Using LM Water GSF	Using Dashboard GSF	Using Water GSF	Using Dashboard GSF
2007	10,992	69,790	1,497,098	136.20	21.45	N/A—baseline year	**N/A—baseline year**
2017	**40,616**	**41,914**	**373,293**	**9.19**	**8.91**	**93.3% reduction**	**59.1% reduction**

Notes:
[a] See Attachment 2, "LMS Sustainability Dashboard Comprehensive Scorecard"

Abbreviations:
gal/GSF = gallons per gross square feet
GSF = gross square feet
N/A = not applicable
WI = Water Intensity

The GSF LM used to determine WI values is different from the GSF in LM's Dashboard snapshot because LM does not use water in all GSF shown in the included Dashboard. Therefore, the WI values in the Dashboard and this SSP are not the same. The values in Table 2 are LM's correct WI values. Table 3 illustrates WI values when using the square footages associated with the Dashboard and LM water use, respectively.

The increase in LM's scope and number of sites from the present to FY 2025 may affect LM's ability to achieve this FY 2025 goal.

LM did not have any major, water-using projects in FY 2017.

As a best management practice, LM considers methods to reduce, reuse, and recycle potable with project-planning tools (e.g., Project/Activity Evaluation forms, Statements of Work).

Table 3. LM Combined-Sites Water Use Since FY 2007

Fiscal Year	Gross Square Footage (GSF) [a]	Water Use (gallons)		Potable-Water WI (gal/GSF)	Potable-Water WI Percent Change	ILA (non-potable) Use Percent Change (gal)
		Potable Water	Non-Potable Fresh Water ILA			
2007	10,992	1,497,098	N/A	136.20	N/A—Baseline year	**N/A**
2008	11,712	1,070,768	N/A	91.42	32.9% reduction	**N/A**
2009	22,512	549,462	N/A[c]	24.41	82.1% reduction	**N/A**
2010	22,464	80,358	503,336[d]	3.58	97.3% reduction	**N/A—baseline year**
2011	69,157	1,112,688	456,093	16.09	88.2% reduction	**9.4% reduction**
2012	69,157	392,791	459,729	5.68	95.8% reduction	**8.7% reduction**
2013	38,422[b]	904,953	397,082	23.55	82.7% reduction	**21.1% reduction**
2014	38,422	381,952	458,530	9.94	92.7% reduction	**8.9% reduction**
2015	38,422	416,838	20,869	10.85	92.0% reduction	**95.9% reduction**
2016	40,616[e]	313,227	5,500	7.71	94.3% reduction	**98.9% reduction**
2017	40,616	373,293	2,000	9.19	93.3% reduction	**99.6% reduction**
FY 2017 combined-sites potable-water WI = (373,293 ÷ 40,616) = 9.19						
FY 2017 combined-sites percent potable-water WI reduction: **= [(2007 WI – 2017 WI) ÷ 2007 WI] × 100%** **= [(136.20 – 9.19) ÷ 136.20] × 100%** **= 93.3% reduction**						
FY 2017 combined-sites percent ILA reduction: **= [(2010 ILA – 2017 ILA) ÷ 2010 ILA] × 100%** **= [(503,336 – 2000) ÷ 503,336] × 100%** **= 99.6% reduction**						

Notes:

[a] Table 2 compares LM's WI (based on water and energy use square footages).

[b] LM demolished its Weldon Spring Site Administration Building in September 2012. Therefore, the Water Conservation team did not include that building's square footage in the combined-sites GSF for FY 2013; (that building's square footage was in the FY 2012 GSF).

[c] SPO redefined fresh water in mid-2009 to include non-potable fresh water, so LM included non-potable use in the overall water use category. In FY 2010, SPO directed LM to not include non-potable water in its EO 13514 potable water reduction goal, but SPO also said that LM should not eliminate the FY 2009 non-potable use values from past reported potable use data.

[d] LM defined non-potable, ILA, fresh water use with its own goal, for which FY 2010 is the baseline year.

[e] Tuba City building GSF was added to the combined-sites GSF because the site's water was deemed potable after water testing was performed in October 2015. FY 2016 was the first year Tuba City was included in potable water use totals.

Abbreviations:

gal = gallons
gal/GSF = gallons per gross square feet
GSF = gross square feet
ILA = industrial, landscaping, and agricultural
N/A = not applicable
WI = water intensity

4.1.2 Potable Water Use Intensity Planned Actions and Projected Performance

LM will continue to investigate ways to reduce potable water intensity. In addition, LM will perform the following planned activities:

- Track and monitor potable water use for FY 2018 and beyond to identify opportunities to reduce potable water consumption and ways to reuse and recycle water.
- Conduct an EISA Section 432 water evaluation at the Tuba City disposal site in FY 2018.
- Maintain, update as needed, and follow the water management plan described in the *Environmental Management Systems Sustainability Teams Manual*, Section 4.0, "Water Conservation Plan" (see Attachment 4).
- Gather information to effectively analyze LM's water balance at applicable sites.
- Be involved early in the project planning process using tools such as the Project/Activity Evaluation and Statement of Work to identify opportunities to reduce potable water consumption and ILA water usage.

4.2 Goal 4.2: Industrial, Landscaping, and Agricultural Water Use Reduction

4.2.1 Industrial, Landscaping, and Agricultural Water Use Performance Status

LM exceeded the FY 2017 interim target of a 9% reduction compared to the baseline year of FY 2010. As shown in Table 3, LM reduced its ILA water use by 99.6%.

The increase in LM's scope and number of sites from the present to FY 2025 may affect LM's ability to achieve the FY 2025 goal.

LM implemented the following best management practices:

- Continued to collect rainwater runoff from the Fernald Preserve Visitors Center roof in a rock channel that flows to the onsite wetlands. This practice reduces storm water runoff and benefits the onsite restored wetlands.
- Continued to implement a water management plan found in the *Environmental Management System Sustainability Teams Manual*, Section 4.0, "Water Conservation Plan" (see Attachment 4).
- Adopted and incorporated federal management practices into the *Environmental Management System Sustainability Teams Manual*, such as landscape management, using storm water runoff, siting for facilities, and identifying unnecessary real property for disposition.

In addition to the best management practices identified above, current ILA water use includes watering new and existing vegetation at the Fernald Preserve site. The water supply source for this use is an onsite groundwater well.

4.2.2 Industrial, Landscaping, and Agricultural Water Use Planned Actions and Projected Performance

LM expects minimal impact from planned FY 2018 activities; however, LM will continue to track and monitor ILA water use, evaluate future projects for the potential to use alternative water sources, and identify opportunities to reduce its ILA water use. In addition, LM will perform the following planned activities:

- Identify and implement the use of low-water-use landscaping technologies and practices.
- Investigate additional alternative water sources to offset the use of ILA water and help achieve ILA water use reduction goals.

5.0 Green Buildings

5.1 Goal 2.4: At least 17% (by building count) of existing buildings greater than 5000 GSF to be compliant with the revised Guiding Principles (GP) for High Performance Sustainable Buildings by FY 2025, with progress to 100% thereafter.

5.1.1 Existing Buildings Performance Status

LM exceeded the interim target of 15% in FY 2017; 45.5 % by building count and 15.5% by GSF of LM's owned buildings greater than 5000 GSF have met the GPs. It is anticipated that LM will exceed the FY 2025 goal.

On September 7, 2016, LM entered into an interagency agreement with the U.S. Army Corps of Engineers for acquisition assistance to design and construct a new interpretive center in support of the long-term mission for the Weldon Spring site. To the extent practicable, this building will comply with the revised GPs.

In September, LM took ownership of four buildings from DOE Office of Environmental Management (EM) at the Mound site. Each of these buildings are greater than 5000 GSF and together total 381,969 GSF. This additional GSF impacted the FY 2017 GPs performance.

LM implemented the following best management practices:

- The new LM office in Westminster was enrolled in the EPA's Energy Star for Tenants pilot program. Building information gathered, such as equipment and lighting inventories, energy estimates, and meter specifications, will assist EPA in developing a new Energy Star recognition for energy efficient tenant spaces.
- LM has incorporated federal GPs and sustainable practices into institutional documents, including site planning documents, policies, procedures, processes, and specifications.

5.1.2 Existing Buildings Planned Actions and Projected Performance

Sustainability considerations continue to be of paramount importance to LM and will be applied to the maximum extent practicable for facilities leased either directly by LM or the LMS contractor if reimbursed by LM.

LM will continue to assess and prioritize buildings greater than 5000 GSF for their potential to meet the GPs and achieve the FY 2025 goal. In addition, LM will perform the following planned activities:

- Participate in EPAs Energy Star for Tenants pilot program using the new leased LM office in Westminster. Attend webinars and use Energy Star tools to gather pertinent building information (such as specifications for meters and equipment) to estimate energy use and share this data with EPA.
- Enter and track the new LM office in Westminster in Energy Star Portfolio Manager.

- Issue a new high-performance sustainable building (HPSB) occupant survey to the occupants of the new LM office in Westminster to assess their comfort as it relates to thermal comfort, acoustics, indoor air quality, lighting levels, building cleanliness, and any other comfort issues.
- A new interpretive center will be constructed at the Weldon Spring site, with occupancy taking place in FY 2020. To the extent practicable, this building will comply with the revised GPs. Meeting the energy efficiency GP ensures energy efficiency is 30% better than the current American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1.
- Apply sustainability considerations to the maximum extent practicable for facilities leased either directly by LM or the LMS contractor if reimbursed by LM.

5.2 Goal 2.6a: Net-Zero Buildings: 1% of the sites existing buildings above 5000 GSF intended to be energy, waste, or water net-zero buildings by FY 2025.

5.2.1 Net-Zero Existing Buildings Performance Status

LM has not yet identified any existing buildings intended to be energy, water, or waste net-zero buildings. However, LM is pursuing different strategies identified in the *Implementing Instructions for Executive Order 13693, Planning for Federal Sustainability in the Next Decade* that help identify where improvements could be made on the existing buildings.

LM implemented the following best management practices:

- Sustainable Buildings team members attended ASHRAE-sponsored webinars for net-zero buildings.
- The Sustainable Buildings team created slides on how energy-efficiency building updates relate to occupants' thermal comfort for the August safety meeting topic.

5.2.2 Net-Zero Existing Buildings Planned Actions and Projected Performance

LM will assess and prioritize existing buildings larger than 5000 GSF for potential to become net-zero buildings and begin developing proposals for funding considerations. In addition, LM will assess and prioritize incoming buildings greater than 5000 GSF for potential to become net-zero buildings.

5.3 Goal 2.6b: Net-zero buildings: All new buildings (>5000 GSF) entering the planning process designed to achieve energy net-zero beginning in FY 2020.

5.3.1 Net-Zero New Buildings Performance Status

LM currently has no new building construction entering the planning process in FY 2020 or thereafter.

5.3.2 Net-Zero New Buildings Planned Actions and Projected Performance

LM will evaluate designing new buildings (>5000 GSF) to achieve energy net-zero requirements if new buildings enter the planning process in FY 2020 or beyond.

5.4 Goal 2.5: Increase regional and local planning.

5.4.1 Regional and Local Planning Performance Status

LM met this goal. Because LM's sites and personnel are dispersed widely across the United States and, with the exception of a few sites, are located in remote areas far from town or city infrastructures, LM expends only nominal effort on coordinating its transportation and infrastructure planning. Most of LM's regional and local planning efforts focus on ecosystem, watershed, and environmental management.

Following are examples of LM's FY 2017 accomplishments and best management practices concerning regional and local planning events:

- LM continued to collaborate with the Dolores River Restoration Partnership (DRRP)—a public-private partnership focused on restoring 200 miles of the Dolores River riparian corridor in southwestern Colorado and eastern Utah—to restore native habitats along 3 miles of the Dolores River on one of the Uranium Leasing Program lease tracts. In FY 2017, DRRP and LM staff worked together to treat noxious weed infestations along the corridor.
- LM continued its long-standing partnership with Diné College (associated with the Navajo Nation) to support its commitment to tribal partnerships, with an emphasis on science, technology, engineering, and mathematics education for Native American youth.
- LM maintained its partnership with the University of Arizona, through which two graduate students conducted research projects that supported the LM mission.
- LM continued partnering with the U.S. Fish and Wildlife Service and the Cincinnati Zoo to release federally endangered American burying beetles at the Fernald Preserve site. This effort is part of a regional recovery program for the beetle.
- In March 2017, LM hosted an open house with Native Americans to develop relationships and provide information concerning LM's sites on Navajo Nation lands. LM also continued to host quarterly meetings with representatives from the Navajo Nation and Hopi tribe to coordinate and discuss LM's proposed environmental work on and near tribal lands.
- In June 2017, LM began participating in the DOE Invasive Species Workgroup, wherein representatives from the various "land-managing" DOE offices discuss issues related to invasive species. The Office of Sustainable Environmental Stewardship acts as liaison between the workgroup and the Federal Interagency Committee for the Management of Noxious and Exotic Weeds.
- On August 21, 2017, LM partnered with the Missouri Department of Conservation to host a public viewing of the solar eclipse from the top of the Weldon Spring disposal cell, the highest publicly accessible point in St. Charles County, Missouri. Celebrators picnicked on the site and participated in scientific, nature-oriented, and family activities during the event.
- On September 9, 2017, LM celebrated the annual monarch butterfly migration with a special event at the Weldon Spring Site Interpretive Center at the Weldon Spring site. The event

was made possible through a collaborative partnership with the Missourian's for Monarchs, Missouri Department of Conservation, and St. Charles County Parks and Recreation. Several additional governmental, nonprofit, and private groups were exhibitors at the event. A similar event was held at the Fernald Preserve site.

- In summer 2017, LM partnered with the U.S. Geological Survey and U.S. Army Corps of Engineers to test the use of various imaging methods for managing vegetative cover on federal sites.

5.4.2 Regional and Local Planning Planned Actions and Projected Performance

LM plans to continue its regional and local planning efforts in FY 2018, primarily through partnering activities with other agencies, tribes, and nonprofit organizations. LM will perform the following planned activities:

- Hold meetings with the Hopi, Northern Arapaho, and Eastern Shoshone Tribes; the Navajo Nation; and the Aleutian Pribilof Islands Association Inc., as needed, to share information and work cooperatively in protecting human health and the environment. LM will continue to host quarterly meetings with Navajo Nation and Hopi representatives to discuss LM's proposed environmental activities on and near tribal lands.
- Maintain involvement with the Dolores River Restoration Partnership to improve natural habitats along the Dolores River. LM will increase its involvement with this group by adding an additional Uranium Leasing Program lease tract in FY 2018.
- Maintain partnership with the U.S. Army Corps of Engineers, St. Louis District under an interagency agreement to design and construct a new interpretive center building at the Weldon Spring site. The design is anticipated to be complete in the fourth quarter of FY 2018 with construction anticipated to begin in the first or second quarter of FY 2019.
- Encourage public participation and offer educational programs at LM sites.
- Maintain partnership with the Museum of Western Colorado to renovate the historic log cabin at the LM office in Grand Junction. The renovated log cabin will be used as a visitors center to inform the public about Western Colorado's important connection to the Manhattan Project.
- Maintain partnerships with neighboring agencies, landowners, and organizations to control the spread of noxious weeds on and near its properties.

6.0 Acquisition and Procurement

6.1 Goal 6.1: Promote sustainable acquisition and procurement to the maximum extent practicable, ensuring BioPreferred and biobased provisions and clauses are included in 95% of applicable contracts.

6.1.1 Acquisition and Procurement Performance Status

LM exceeded the interim target of 95%. In FY 2017, 100% of new contract actions, under new and existing contracts, included requirements for products and services to (1) be energy efficient (Energy Star or Federal Energy Management Program–designated), water efficient, biopreferred and biobased, environmentally preferable (including Electronic Product Environmental Assessment Tool [EPEAT]–registered products), non-ozone-depleting, and nontoxic or less toxic, and (2) contain recycled content, as reported in the DOE Sustainability Dashboard.

In FY 2017, 99% of products and services purchased by LM were sustainable (where recycled and biopreferred and biobased products are identified as available by the U.S. Department of Agriculture and EPA).

The following best management practices ensured sustainable products were purchased when appropriate:

- The LMS contractor ensured subcontract terms and conditions for services, construction, and commodities products contained the sustainable acquisition language and required reporting of sustainable products for each applicable subcontract.
- The current LM affirmative procurement plans, policies, and programs ensured that all federally mandated designated products (e.g., BioPreferred or biobased) and services are included in all relevant acquisitions.
- The current procurement process allowed for review by a subject matter expert to identify applicable sustainable acquisition requirements.
- The bulk data for products and services was included in the LMS contractor quarterly Performance Assurance Measures report.
- Using data in the JAMIS (Job Cost Accounting Management Information System) data warehouse, the LMS Information Technology (IT) Solutions Operations & Maintenance department created electronic reports that provide information on products and services used by the LMS contractor. Information for new contract actions is collected manually, and all actions are reviewed.
- The Sustainable Acquisition webpage on the LM Intranet contains links that helped employees locate EPA recommendations for environmentally preferable specifications, products, and product vendors and service providers that meet green standards.

6.1.2 Acquisition and Procurement Planned Actions and Projected Performance

LM will continue to promote sustainable acquisition and procurement to the maximum extent practicable, ensuring BioPreferred and biobased provisions and clauses are included in 95% of applicable contracts. The expected impact of the planned activities is to meet or exceed the DOE goal. In addition, LM will perform the following planned activities:

- Include the required language that products and services be green or sustainable in the LMS contractor terms and conditions for all commodities and services.
- Promote sustainable acquisitions and procurement to the maximum extent practical and ensure that 95% of new contract actions, under both new and existing contracts, contain language that requires the supply or use of sustainable products and services.
- Ensure that 95% of EPA and U.S. Department of Agriculture–listed products and services purchased, excluding all credit card purchases, are environmentally preferable or sustainable in accordance with EO 13693 and as subject to certain qualifications.
- Track compliance with the goal of purchasing 95% sustainable products and services (includes tracking for the performance assurance summary and LM's annual reporting on FedCenter website and in the DOE Sustainability Dashboard).
- Emphasize the requirement for federally mandated, designated products in all procurement actions as necessary through bimonthly team meetings.
- Require that purchases of noncompliant energy-efficient products have written preapproval from a subject matter expert.
- Attend the DOE bimonthly sustainable acquisition teleconference/webinar to stay abreast of what other DOE programs and contractors are doing to purchase sustainable products and services.

7.0 Waste

7.1 Goal 1.1: 50% Scope 1 & 2 GHG reduction by FY 2025 from a FY 2008 baseline. The interim reduction target for FY 2017 was 25%.

7.1.1 Scope 1 and 2 GHG Performance Status

LM exceeded this Scope 1 and 2 GHG interim target of 25%. LM reduced Scope 1 and 2 GHG by 47.7%. It is anticipated that LM will meet the FY 2025 goal.

The increase in LM's scope and number of sites from the present to FY 2025 may affect LM's ability to achieve the FY 2025 goal. As LM's number of sites grows and program activities expand, increased staff will be required, which will affect onsite wastewater treatment volumes, resulting in an increase in GHG emissions from this source. It is also anticipated that the number of visitors to different LM site's visitor centers will continue to increase, which will also affect onsite wastewater treatment volumes and source-specific GHG emissions. This will result in an increase in Scope 1 and 2 GHG emissions, which will make it more challenging in the future for LM to achieve the GHG emission reduction goal. Although the onsite wastewater treatment's GHG emission components will continue to increase with staffing and visitor growth, this source is only a small contributor to DOE's overall performance against the Scope 1 and 2 GHG reduction goal.

7.1.2 Scope 1 and 2 GHG Planned Actions and Projected Performance

With the following planned activities, LM expects to continue to reduce Scope 1 and 2 GHG emissions associated with waste:

- Encourage staff to reduce potable water use, which affects the volume of influent treated at onsite wastewater treatment facilities.
- Allow flexible workweeks and work to increase telecommuting options through mutual alternative work agreements, which will reduce the number of employees contributing waste to the treatment facilities.

7.2 Goal 1.2: 25% Scope 3 GHG reduction by FY 2025 from a FY 2008 baseline. The interim reduction target for FY 2017 was 9%.

7.2.1 Scope 3 GHG Performance Status

LM exceeded this Scope 3 interim target of 9% by reducing this category of GHG by 20.2%.

LM continued to exceed the annual interim reduction target as shown in Figure 4, which presents data from FY 2013 through FY 2017 and shows annual Scope 1 & 2 GHG emissions progress toward the FY 2025 goal.

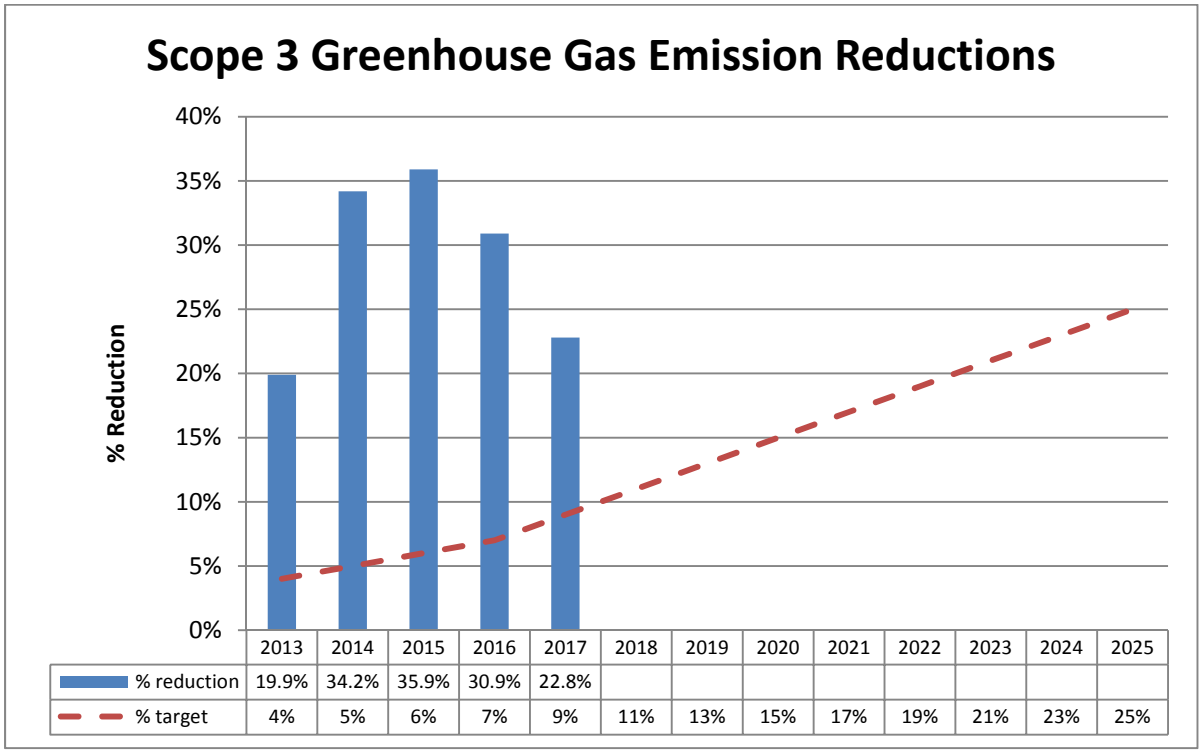


Figure 4. Scope 3 Greenhouse Gas Emissions Reductions

The increase in LM's scope and number of sites from the present to FY 2025 may affect LM's ability to achieve the FY 2025 goal because staffing and visitor numbers will increase, which will increase volumes of wastewater that need to be treated in offsite wastewater treatment facilities and solid waste generation amounts, which will affect offsite municipal solid waste management facilities. This will result in an increase in Scope 3 GHG emissions, which will make it more challenging in the future for LM to achieve the GHG emission reduction goal. In FY 2017, there were approximately 80 additional employees than there were in FY 2016 that contributed to the increased wastewater treatment volume at offsite treatment facilities.

Past years' calculations of offsite wastewater treatment emissions included LM staff from the Forrestal building. Based on recent guidance, Forrestal employees are not included in this year's numbers because their use of offsite wastewater treatment is already included by EM. LM will be working with the SPO through the change request process to remove Forrestal employees included in offsite wastewater treatment calculations in previous years.

LM's pollution prevention, waste reduction, and recycling efforts include having federal and contractor policies for pollution prevention, sending employees related messages through various forms of media at least once a year, promoting waste reduction and diversion strategies with project teams, and having recycling receptacles in individual offices and common areas at staffed office sites.

7.2.2 Scope 3 GHG Planned Actions and Projected Performance

With the following planned activities, LM expects to continue to reduce Scope 3 GHG emissions associated with waste:

- Encourage staff to reduce potable water use, which affects the volume of influent treated at offsite wastewater treatment facilities.
- Allow flexible workweeks and work to increase telecommuting options through mutual alternative work agreements to reduce emissions associated with employee commuting. This will reduce the number of employees contributing waste to the treatment and disposal facilities.
- Encourage recycling of solid waste by employees to help reduce the amount of waste that is sent to disposal facilities.

7.3 Goal 7.1: Divert at least 50% of nonhazardous solid waste, excluding construction and demolition debris.

7.3.1 Nonhazardous Solid Waste Performance Status

LM exceeded this goal by diverting 51.1% of its nonhazardous solid waste (excluding construction and demolition debris [C&D]) from landfills. For the first time, LM is not including reused material toward waste diversion in the nonhazardous solid waste category based on new Council on Environmental Quality guidance (*Interim Guidance for Calculating Federal Compliance with Executive Order 13693 Waste Diversion Goals*, December 2016).

LM continued to show a year-to-year overall reduction in its total quantity of nonhazardous solid waste generated with a 5.1% reduction in FY 2017, as compared to FY 2016. Overall waste reduction will significantly factor into helping LM pursue pollution prevention and zero-net waste in the future. LM's efforts to meet the diversion goal of 50% were achieved through project planning and decision-making with support from Environmental Compliance and sustainability team representatives who assist with data collection, tracking, and status reporting.

- Over the past 6 years, LM achieved the 50% diversion goal for nonhazardous solid waste three times. A chart showing LM's waste diversion performance for FY 2012 through FY 2017 is provided in Figure 5.

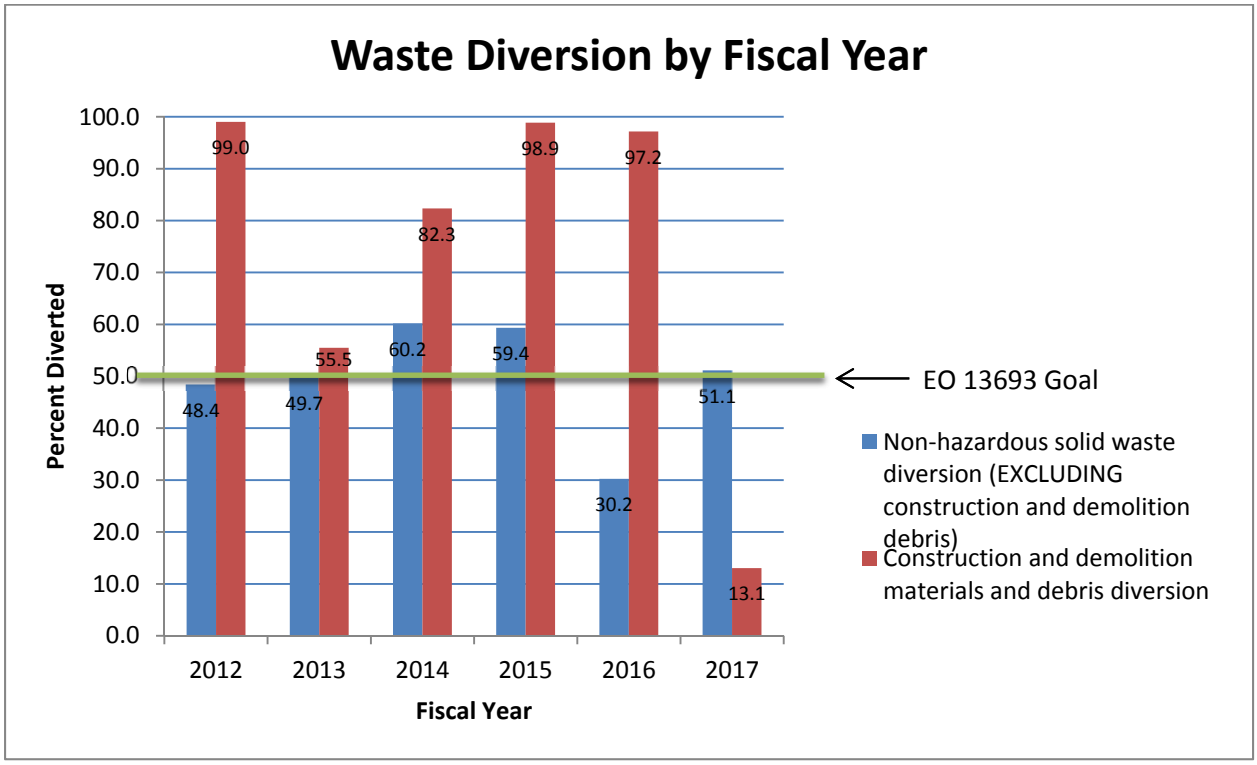


Figure 5. Percent Waste Diversion by Fiscal Year

LM implemented the following best management practices:

- As part of early project planning, LM continued to consider ways it can reduce, reuse, and recycle materials with project-planning tools (e.g., Project/Activity Evaluation forms, Statements of Work).
- To facilitate pollution and waste prevention in the job planning process, LM continued to use its *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies*. This guidance document provides project and site managers with specific-source reduction, recycling, and waste reduction measures to consider in planning and implementing projects and in operating their sites.
- LM continued to maintain Excel spreadsheet inventories for recycled and reused materials, chemicals, universal wastes, and solid, hazardous, and radioactive wastes. These tracking spreadsheets are maintained and updated twice a year.
- LM's staffed sites continued to be primarily leased facilities with limited options for composting. LM does not have any cafeterias, so the organic waste stream is limited to small amounts of food or beverage waste. The Fernald Preserve site has a passive compost operation with woodchip mulch piles to manage its outdoor organic material waste. If the material is not reused as mulch onsite in the first year, it eventually breaks down and is used as an organic amendment for topsoil for onsite landscaping.
- LM has increased the use of acceptable nontoxic or less-toxic alternative chemical processes and minimized acquisition of hazardous chemicals and materials by incorporating sustainable purchasing requirements and resources into the purchasing and procurement system. LM reviews all chemical procurement requests to ensure that chemicals regulated

under the Emergency Planning and Community Right-to-Know Act of 1986 are tracked and reduced if possible, or undergo a sustainable-alternatives review. Acceptable alternative chemicals are approved through the procurement and job-planning processes. Sustainability codes are used to code purchases for tracking and evaluation.

- LM sponsored two waste reduction campaigns. One was a no-print day, which promoted source reduction, and another was Office Clean-Out Week, which promoted reuse and recycling.

7.3.2 Nonhazardous Solid Waste Planned Actions and Projected Performance

With the following planned activities, LM expects to continue to minimize waste and reduce pollution:

- Assess waste streams and chemical inventories for pollution prevention and waste minimization opportunities.
- Encourage the use of environmentally preferable products.
- Evaluate updates to nonhazardous waste recycling stations designed to increase participation and offset increases in population.
- Investigate net-zero strategies that would help LM begin developing a path to achieving the FY 2025 goal.
- Implement actions or projects at LM-designated buildings to advance the goal of making them net-zero buildings.

The expected impact of these planned activities is identification of gaps in LM's current pollution prevention and waste minimization efforts that will lead to improved prioritization and implementation of initiatives.

7.4 Goal 7.2: Divert at least 50% of construction and demolition materials and debris.

7.4.1 Construction and Demolition Materials and Debris Performance Status

LM missed this goal by diverting 13.1% of its C&D from landfills. LM fell short of achieving the 50% diversion goal primarily because of the large amount of excavated wet soil mixed with plastic sheeting that was generated from the Durango disposal site's evaporation pond removal project and disposed of at a landfill. This atypical waste stream from a nonroutine LM project accounted for 94% of LM's C&D that was sent to a landfill. Reuse opportunities were not available for the Durango soil because shredded plastic sheeting was mixed throughout the soil.

- Over the past 6 years, LM has achieved the 50% diversion goal for C&D five times. A graph showing LM's waste diversion performance for FY 2012 through FY 2017 is provided in Figure 5.
- One LM FY 2017 success story for C&D was at the Fernald Preserve site. Workers reused approximately 48 tons of excavated trail subgrade material—mixture of clay and gravel—for onsite tertiary road maintenance.

LM implemented the following best management practices:

- Most LM projects that generate C&D are unique. As part of early project planning, LM evaluated ways it can reduce, reuse, and recycle materials with project-planning tools (e.g., Project/Activity Evaluation forms, Statements of Work).
- To facilitate pollution and waste prevention in the job planning process, LM continued to use its *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies*. This document provides project and site managers with specific source reduction, recycling, and waste reduction measures to consider in planning and implementing projects and in operating their sites.
- LM maintained Excel spreadsheet inventories for recycled and reused materials, chemicals, universal wastes, and solid, hazardous, and radioactive wastes. These tracking spreadsheets were updated twice a year with data compiled by the Environmental Compliance points of contact for each LM site.
- LM's pollution prevention, waste reduction, and recycling efforts included having federal and contractor policies for pollution prevention, sending employees related messages through various forms of media at least once a year, promoting waste reduction and diversion strategies with project teams, and having recycling receptacles in individual offices and common areas at staffed office sites.

7.4.2 Construction and Demolition Materials and Debris Planned Actions and Projected Performance

With the following planned activities, LM expects to continue to minimize C&D waste and reduce pollution:

- Present the *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies* at applicable task assignment meetings and incorporate references to the guidance in relevant manuals as they are revised.
- Identify opportunities for increased reuse and recycling on projects by working with site leads and managers to identify FY 2018 construction and demolition activities.
- Share a complex-wide pollution prevention message during Pollution Prevention Week.
- Utilize integrated pest management and landscape management practices to reduce pollutants to the environment.

8.0 Electronic Stewardship and Data Centers

8.1 Goal 9.1: Purchases: 95% of eligible acquisitions each year are EPEAT-registered products.

8.1.1 Electronic Acquisitions Performance Status

LM exceeded the interim target. Almost 100% (99.73%) of eligible acquisitions in FY 2017 were EPEAT-registered products, exceeding the requirement to purchase at least 95% EPEAT-registered products. For the third year in row, LM was awarded the EPEAT Purchase Award. Table 4 shows LM's 2017 EPEAT purchases.

Table 4. FY 2017 EPEAT Purchases

Electronics	Total Number Acquired	EPEAT-Registered			EPEAT Compliance
		Bronze	Silver	Gold	
Desktop Computers	1	0	0	1	100%
LCD Monitors	153	0	2	150	99.35%
Notebook Computers	207	0	0	207	100%
Tablets	7	0	0	7	100%
Printers	2	0	1	1	100%
Multifunction Devices	5	3	1	1	100%
Facsimile Machines	1	1	0	0	100%
All Eligible Electronics	**376**	**4**	**4**	**367**	**99.73%**

LCD = liquid crystal display

8.1.2 Electronic Acquisition Planned Actions and Projected Performance

LM will continue procuring EPEAT-registered products at current compliance levels in accordance with DOE requirements. The expected impact will be to achieve the FY 2018 goal. In addition, LM will do the following:

- Manage purchases of electronic products in an environmentally responsible manner.
- Require that purchases of noncompliant products have written approval from a subject matter expert.

8.2 Goal 9.2: Power management: 100% of eligible PCs, laptops, and monitors have power management enabled.

8.2.1 Power Management Performance Status

LM met this interim target. Power management is enabled in 100% of eligible equipment. LM uses the following best management practice to reduce power usage:

- Administers power management on all desktop and laptop systems, which extends to digital displays and printers and cannot be altered by users, via network group policy.
- Systems running mission-critical processes requiring exemption from the standard power management configuration are documented as exceptions and controlled by a separate group policy.

8.2.2 Power Management Planned Actions and Projected Performance

LM will continue to enable power management capabilities on eligible equipment to ensure attainment of the goal. In addition, LM will perform the following planned activities:

- Take action to conserve energy usage at all LM data centers. LM plans to continue the virtualization process where applicable. Virtualization allows for one server to perform the function of up to 100 individual servers, which results in a reduction in direct power usage and, in particular, a reduction in cooling needs.
- Continue phasing out physical hardware servers for the more electronically efficient virtual-machine technology whenever possible. A variety of benefits are realized, including a smaller footprint and reduced cooling and overall power requirements, as well as scaling back on the pervasiveness of electronic components in operation.
- Pursue efficient use of desktop or laptop or notebook systems, merging use where possible to reduce the number of devices in operation. Minimize the number of systems that exist in general office space, including the number of duplicate desktop and laptop or notebook computer systems.
- Phase out locally attached, personal-use printers, facilitated by the secure printing option now available on all network-managed multifunction devices at all locations. The growing use of shared network devices will contribute to the ongoing reduction of paper, printing supplies, and power usage.

8.3 Goal 9.3: Automatic duplexing: 100% of eligible computers and imaging equipment have automatic duplexing enabled.

8.3.1 Automatic Duplexing Performance Status

LM met the interim target. Automatic duplexing is enabled on 100 % of eligible equipment. As a best management practice, LM sets all eligible printers to default to automatic duplexing.

8.3.2 Automatic Duplexing Planned Actions and Projected Performance

LM will continue to enable automatic duplexing capabilities on eligible equipment to ensure attainment of the goal. In addition, LM will perform the following planned activities:

- Evaluate efficient and environmentally sustainable printing capabilities in accordance with EO 13693.
- Measure reduction of paper, toner cartridges, and power consumption after implementation of code-required printouts.
- Implement best practices from the DOE Guide 436.1-1, *Federal Sustainable Print Management*.

8.4 Goal 9.4: End-of-Life: 100% of used electronics are reused or recycled using environmentally sound disposition options each year.

8.4.1 End-of-Life Performance Status

LM met the interim target. LM dispositioned of 100% of used electronics in an environmentally sound manner.

As a best management practice, LM's IT and Personal Property groups have developed and refined the process for tracking and disposing of old equipment. When disposition of equipment occurred, IT coordinated with the Personal Property group to provide pictures for posting to the GSAXcess site. If equipment was not appropriate for sale, it was donated through appropriate local donation avenues that have been established to facilitate reuse. Recycling was viewed as a last resort if sale or other reuse was not a viable option. All LM electronic recycling was facilitated through certified recyclers. Table 5 shows detailed information on electronics reused and recycled during FY 2017.

Table 5. FY 2017 Electronics Reuse and Recycling

Weight of Bulk Electronics	Weight Transferred or Donated (lb)	Weight Recycled Through Certified Recycler (lb)	Weight Recycled Through Noncertified Recycler (lb)	Weight Disposed (e.g., landfill) (lb)
	2245	6053	0	0

Abbreviation:
lb = pounds

LM procedures identified in the LMS *Personal Property Management Manual* require that all personal property excess actions involve Personal Property personnel. Specific to electronics reuse, all electronics that can be reused in LM can be transferred. However, LM also uses GSAXcess to disposition excess electronics through interagency transfers, the GSA Exchange/Sale authority, and the Computers for Learning Program. For all electronics that cannot be reused and or that have been identified as waste, LM uses the services of an R2- or eSteward-certified recycler to collect and recycle that electronic waste.

8.4.2 End-of-Life Planned Actions and Projected Performance

LM will continue to disposition used electronics in an environmentally sound manner. In addition, LM will perform the following planned activities:

- Track data associated with managing used electronics.
- Reuse or recycle used electronics by applying environmentally sound disposition practices to ensure continued attainment of this goal.
- Surplus or excess electronic products in an environmentally responsible manner.
- Choose reuse of electronics over recycling, when possible.

8.5 Goal 9.5: Data Center Efficiency: 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.

8.5.1 Data Center Efficiency Performance Status

LM successfully exceeded the power usage effectiveness FY 2017 interim target of 1.4 with a score of 1.08 for the data center located at the LMBC and score of 1.14 for data center located at the LM office at Grand Junction. As a best management practice, LM utilized top-of-the-line racking and cooling infrastructure in conjunction with following manufacturers' recommended maintenance programs.

8.5.2 Data Center Efficiency Planned Actions and Projected Performance

LM will continue to effectively utilize power associated with any new or existing data centers to ensure attainment of the target. In addition, LM will perform the following planned activities:

- Optimize the configuration of LM's data centers by monitoring data center power consumption in accordance with Federal Data Center Consolidation Initiative standards and through LM's ongoing server virtualization effort.
- Observe and follow all guidance and metrics as determined by the Federal Data Center Consolidation Initiative.

9.0 Vehicles and Fleet

9.1 Goal 5.1: 30% reduction in fleet-wide per-mile GHGs reduction by FY 2025 from a FY 2014 baseline.

9.1.1 Vehicle and Fleet GHG Reduction

LM has exceeded the interim target of a 4% reduction. In FY 2017, LM reported 553.26 grams of carbon dioxide emissions per mile for a reduction of 12.6%. LM's fleet's GHG emissions-per-mile baseline for FY 2014 was 629 grams of carbon dioxide emissions per mile.

The increase in LM's scope and number of sites expected by FY 2025 may continue to affect LM's ability to accomplish the FY 2025 goal. Two examples of scope change that impacted performance are described below:

- GSA provided a limited selection of low-GHG-emitting vehicles in the class required by LM to achieve its mission of post-closure responsibilities and ensure the protection of human health and the environment. GSA has indicated that there will be only a small quantity of low-GHG-emitting vehicles available each year. LM's policy is to obtain E-85-capable alternative-fuel vehicles (AFVs) as alternatives when (1) low-GHG-emitting vehicles are not available or insufficient for the intended use and (2) E-85 fuel is available and does not require an increased unnecessary cost.
- The Defense-Related Uranium Mines (DRUM) Program field team, which performs verification and validation of mine sites, was initiated in FY 2017. Many of the abandoned uranium mines are in remote areas where cellular service is not available and where roads are not maintained to a condition suitable for a typical highway vehicle. There are no low-GHG-emitting vehicles that would adequately suffice for the mission needs of this program. In order to meet its requirements of the program, LM increased the fleet size by four new dedicated gasoline-fueled vehicles, which will naturally increase the GHG emissions per mile for the overall fleet.

In FY 2017, LM acquired one additional low-GHG-emitting vehicle. The following are three lessons learned in relation to LM performing work with this type of vehicle:

- The vehicle lacks a spare tire. For original equipment manufacturers to meet efficiency standards, they reduced the weight of vehicles by replacing spare tires with fix-a-flat systems. In an off-road scenario, the type of tire damage caused by this environment most likely cannot be solved by a fix-a-flat system. Due to the fact that roadside assistance is not offered for off-road work and the lack of appropriate solutions to flat tires while operating off-road, low-GHG-emitting vehicles are not the safest choice or appropriate in most cases for LM to meet its mission.
- The vehicle lacks the engine power necessary for (1) hauling the types of trailers LM has and (2) climbing steep mountain roads. Since a large portion of LM's work is at sites that are in the mountains or only accessible through off-road terrain, low-GHG-emitting vehicles are not versatile enough to meet the work requirements in most cases. Due to the limited power provided by low-GHG-emitting vehicles, a decrease in utilization for that vehicle is expected. In addition, there is an increased cost of having to acquire additional vehicles to support the needs of LM that the low-GHG-emitting vehicle could not.

- The low-GHG-emitting vehicles that are available through GSA are too small to haul materials for recycling because the materials are often bulky and of a large volume. The smaller vehicles are also too small to transport equipment needed for the majority of LM's site operations. Using a low-GHG-emitting vehicle often requires additional trips and accumulation of miles which contributes to a cumulative increase of GHG emissions that is higher than what LM would have had using a larger SUV to make one trip.

All three examples illustrate the limitations that were observed when using a low-GHG-emitting vehicle to perform LM work. As noted above, these limitations can potentially increase costs and the number of trips and miles driven, negatively impact safety, and prevent LM from adequately providing the equipment necessary to accomplish the mission.

9.1.2 Vehicle and Fleet GHG Planned Actions and Projected Performance

LM will continue to promote reduction in GHGs associated with the vehicles within its fleet. The expected impact of the planned activities is to meet or exceed DOE's goals. In addition, LM will continue to:

- Evaluate low-GHG-emitting vehicles when replacing or adding any vehicle to LM's fleet as a first option, using requirements based on the vehicle's intended use and mission needs. LM's secondary approach is to obtain E-85-capable flex-fuel vehicles when low-GHG-emitting vehicles are not available or not appropriate for supporting the LM mission and when E-85 fueling infrastructure is available. LM's policy of acquiring low-GHG-emitting vehicles and E-85-capable vehicles is shown to help reduce the agency wide per-mile GHG emissions "at the tailpipe."
- Identify possible opportunities to trade in LM vehicles for smaller and possibly low-GHG-emitting vehicles that can assist in right-sizing LM's fleet and increase progress toward LM's GHG-emissions goals when the mission allows. This methodology will ensure that an adequate minimally sized vehicle is acquired to perform the tasks needed and that it is at the lowest cost to the taxpayer.
- Communicate to employees the need to fuel vehicles with alternative fuels when possible and while operating alternative-fuel capable vehicles.

9.2 Goal 5.2: 20% reduction in annual petroleum consumption by FY 2015 relative to a FY 2005 baseline; maintain 20% reduction thereafter.

9.2.1 Petroleum Consumption Performance Status

LM achieved a 2.0% increase and did not meet the FY 2017 target when using the recorded Federal Automotive Statistical Tool (FAST) FY 2005 baseline. LM achieved a 20.1% reduction and met the FY 2017 target when using the more accurate FY 2005 baseline assumption where conventional and E-85 fuel use were combined as described below. LM achieved a 41.82% reduction and met the FY 2017 target when using normalized figures.

LM's deviation from the reported baseline was due to inaccurate recording assumptions in FAST and lack of alternative fuel infrastructure in the baseline year (FY 2005), and the need to represent an increase in scope due to new post-closure sites transitioning into LM. In FY 2005,

all fuel reported by LM as E-85 was in fact petroleum. The adjusted FY 2005 baseline is 31,488 gallons (gal) of petroleum fuel consumed.

As a way to evaluate LM's consumption trends in light of increased scope due to sites transitioning into LM's portfolio, LM normalizes the data to better represent the fuel use on a per-site basis. Using the adjusted baseline of 31,488 gal of petroleum and the number of sites that LM supported during the baseline year of FY 2005 (67 sites), the normalized baseline is 470 gal per site. In FY 2017, cumulative petroleum fuel use was 25,158 gal (92 sites); a normalized figure of 273.46 gal per site is reported.

The petroleum reduction figures reported here do not appear to match the DOE Sustainability Dashboard's comprehensive scorecard report because the scorecard looks at gallons of gasoline equivalents instead of natural units. LM reported its data in the SSP based on natural units.

LM expects an increase to approximately 121 sites by FY 2025. As such, the need for additional vehicles to support those sites will continue to increase, making it difficult for LM to meet the petroleum reduction goals. Additionally, the lack of alternative fueling infrastructure near many of LM's sites makes it increasingly difficult to meet petroleum reduction goals. Three examples that impacted reduction of petroleum consumption by LM's additional 11 vehicles are identified below:

- The DRUM Program for performing verification and validation of mine sites was initiated in FY 2017. Due to the program's mission, LM's fleet increased by six additional vehicles, four of which were gasoline-dedicated Jeep Wrangler Rubicons that were not offered in an alternative-fuel configuration and two of the six vehicles were alternative-fuel capable ¾-ton trucks. Due to the remote location and access routes to the mines and the safety of LM's staff, versatile off-road-capable automobiles, utility terrain vehicles, and the trucks needed to haul them and their project equipment were required. The DRUM Program did not increase the LM site count, but the DOE *Defense-Related Uranium Mines Report to Congress* identified 4225 mines within this program; thus, the vehicle utilization has increased.
- The increase in site work and personnel working on LM sites that are supported by fleet vehicles at the LM offices in Grand Junction and Westminster justified the addition of four pooled vehicles (three of which are in Grand Junction and one that is in Westminster).
- Additionally, the SOARS project scope increased in FY 2017, which justified the addition of a subpooled vehicle for the team, meaning that when the team that is assigned that vehicle is not using it, it can be used as a pooled vehicle by others that have a need. This methodology increases the utilization of the vehicle and creates a cost savings to the government.

Historically, LM has met these targets without taking into account the number of vehicles in the LM fleet. However, due to a 29% increase in LM's fleet size, where 4 of the 11 new vehicles are gasoline dedicated, LM will be required to address this as part of future methodologies for reporting. In the past, fluctuations in fleet size were relatively small and did not drastically affect goal accomplishment. Due to the increase this year in vehicles, LM expects that this will have dramatic effect upon mileage and fuel consumption sustainability goals.

LM's mission is continually increasing as DOE sites go into post-closure status. However, direct reporting only captures the relationship of fuel to miles. So as more sites come under the

responsibility of LM, vehicle count, fuel consumption, and miles traveled increases and the LM metric deviates further from its goal. As a best management practice to evaluate LM's consumption trends in light of increased scope, LM normalizes its reporting to incorporate the increase in site count, as listed in the LM *Site Management Guide*, by representing petroleum reduction in terms of an average fuel-per-site metric. Normalized data is reported to better represent the true nature of the consumption.

Based on the normalized values, LM's petroleum fuel use in FY 2017 indicated a 41.82% reduction in consumption since the baseline year of FY 2005. Furthermore, LM continued to perform work at sites that are not part of the official LM site count due to the DRUM and Plowshare Programs. Incorporation of these additional sites would further increase the percent reduction of petroleum-per-site metric.

Additionally, LM reduces petroleum fuel use by the following means:

- Acquiring more E-85-capable vehicles, tracking and updating E-85 station locations for vehicle users, and promoting ride-sharing, trip consolidation, and videoconferencing whenever possible. In addition, LM used virtual-presence meeting software to reduce both business travel and petroleum fuel use and their associated GHG emissions.
- Replacing all light-duty vehicles with AFVs depending on the intended use of the vehicle at the time of replacement and the site or project's needs. Low-GHG-emitting vehicles are considered AFVs even when fueled with gasoline and are the first choice for acquisitions.

9.2.2 Petroleum Consumption Planned Actions and Projected Performance

Through ongoing monitoring and reporting, LM will strive to meet or exceed its petroleum reduction goals and identify and mitigate issues that negatively contribute to goal accomplishment. Planned activities and their associated expected impact are further described in the LM *Fleet Management Plan* (see Attachment 5). In addition, LM will perform the following planned activities:

- Maintain a list of vehicles, monitor the monthly fuel consumption and vehicle trip data, and take appropriate action to meet sustainability goals for vehicle and fuel use whenever possible.
- Attempt to increase the overall fuel economy of the fleet by continually working with GSA to acquire smaller, more efficient and rightsized vehicles and by using other advanced-technology vehicles when it will accommodate mission needs.
- Identify the most fuel-efficient vehicle for a given task by taking into account miles driven, fuel used, vehicle use, and terrain types traveled, such as off-road rocky conditions often requiring specialized vehicles.
- Use the telematics data to better evaluate opportunities for further petroleum reductions and ensure compliance with EO 13693.
- Promote carpooling and use of teleconferencing.

9.3 Goal 5.3: 10% increase in annual alternative fuel consumption by FY 2015 relative to a FY 2005 baseline; maintain 10% increase thereafter.

9.3.1 Alternative Fuel Consumption Performance Status

LM did not meet this goal using the FAST baseline usage. Using the reported baseline of 4275 gal of E-85 and current E-85 used for FY 2017 of 3273 gal, LM achieved a reduction of 22.6% and did not meet the goal.

LM has determined that all FY 2005 E-85 fuel was incorrectly recorded as E-85 when in fact it was conventional fuel. To accurately reflect changes in alternative fuel consumption, LM used 1 gal of E-85 as the baseline and recorded 3273 gal of E-85 used for FY 2017. Using actual data, LM achieved an increase of 327,200% in E-85 fuel use and has met this goal. Using an adjusted baseline for E-85 use, LM used the reported 2235 gal of E-85 from FY 2009, an accepted more accurate baseline, and 3273 gal of E-85 used for FY 2017. LM achieved an increase of 46.44% in E-85 use and has met this goal.

The following changes to LM's mission impacted FY 2017 performance:

- The DRUM Program personnel traveled to 148 sites in FY 2017, none of which are part of the official LM site count, as LM does not own the sites.
- The LM Plowshare Program personnel traveled to five sites that were not part of the official LM site count to support that program's mission.

LM has consistently exceeded the annual goal of a 10% increase in alternative fuel consumption.

As best management practices, LM incorporated reminders to fuel with E-85 in its routine communications and continued to work with the Training department to introduce a refresher training that includes requirements to fuel with alternative fuels, while also updating course GSA 101, LM Fleet Vehicle Use, to include information on fueling with alternative fuels and some tools to help drivers identify locations of alternative fuels.

9.3.2 Alternative Fuel Consumption Planned Actions and Projected Performance

LM will continue to promote an increase in alternative fuel use. The expected impact of the planned actions is that DOE's goals will be met or exceeded. LM reviews the locations of E-85 stations relative to the occupied sites. The LMS Fleet Management team will add reminders during its routine communications to fuel with E-85 and will educate drivers with online and mobile tools to identify alternative fuel locations. In addition, LM will perform the following planned activities:

- Track E-85 fuel use by each vehicle for reporting purposes.
- Monitor DOE's Energy Efficiency and Renewable Energy website to determine changes to E-85 fuel infrastructure availability by garaging location.
- Update and include maps and station listings showing E-85 fuel stations in all E-85-capable vehicle black books for easy reference by drivers.
- Update trainings to include up-to-date information in regard to alternative fuel use requirements and tools.

In regards to LM and the locations that LM's fleet operates, there are no biodiesel infrastructures available to warrant acquiring biodiesel-capable vehicles at this time.

9.4 Goal 5.4: 75% of light duty vehicle acquisitions must consist of alternative fuel vehicles (AFV).

9.4.1 Vehicle Acquisition Performance Status

LM did not meet the FY 2017 interim target. Of acquired vehicles, 71% were AFVs. As previously described under GHG emission and petroleum use consumption goals, four of the vehicles acquired were only available as gasoline-dedicated vehicles and there were no other AFVs available that would accomplish the tasks associated with the DRUM Program or Plowshare Program.

9.4.2 Vehicle Acquisition Planned Actions and Projected Performance

LM will continue to acquire alternative-fuel light-duty vehicles when appropriate for the mission. The expected impact of the planned actions is to meet or exceed the DOE goal without negatively impacting LM's mission or project task accomplishment. LM's strategy is to replace 75% of all light-duty vehicles, at the end of their lifecycle, with AFVs, when it will not negatively impact the LM mission. A large percentage of LM sites do not have E-85 fueling stations near to them to accommodate an E-85-fuel-capable vehicle with alternative fuels. In this case, it would not be cost-effective for LM to lease E-85 vehicles that have added incurred monthly costs to the government (see Attachment 5). LM's first approach will always be to acquire low-GHG-emitting vehicles, which are considered AFVs even when operated with gasoline, and when those vehicles are available and practical for the LM fleet. These are ongoing planned actions that were implemented and continue to be an effective strategy for meeting LM's AFV acquisition goals.

In addition, LM will perform the following planned activities:

- Record and track vehicle-related data and produce monthly and quarterly summary reports that include information regarding AFV acquisitions, mileage, utilization, fuel use, and cost.
- Report data into FAST, which reports a projected 3-year vehicle acquisition forecast that includes AFV acquisitions for all light-duty vehicles.

9.5 Goal 5.5: 50% of passenger vehicle acquisitions consist of zero emission or plug-in hybrid electric vehicles by FY 2025.

9.5.1 Passenger Vehicle Acquisitions Performance Status

This goal is not applicable as LM does not have any passenger vehicles.

The increase in LM's scope and number of sites from the present to FY 2025 may affect LM's ability to achieve the 2025 goal.

LM's mission requires extensive engine-on time in locations that are remote to the vehicle garaging location. Additionally, LM has a policy to protect its employees from weather hazards onsite by using the GSA vehicles to keep warm or cool while performing work. In an electric or hybrid vehicle, keeping the air conditioning and heater running at an idle, even for short periods of time, can drain batteries and create more issues for a worker. The majority of sites LM supports do not have vehicle plug-in stations or electricity in some cases. As such, hybrid or plug-in technology is not conducive to LM activities and is not current available infrastructure.

As a best management practice, LM has four low-speed electric vehicles (LSEVs) to help support onsite activities. LSEVs provide LM with credit toward zero-emission electric vehicle goals. However, these LSEVs are not reportable in the FAST fleet reporting tool since they are not operated on public roads.

9.5.2 Passenger Vehicle Acquisitions Planned Actions and Projected Performance

LM will evaluate the acquisition of charging infrastructure and zero-emission vehicles when LM's mission allows for passenger carriers. LM does not have any passenger carriers in its fleet. All LM vehicles are considered cargo-carrying vehicles for project or site work purposes. Until there is a need for a passenger automobile, LM will continue to pursue other vehicle means that will positively contribute to the effectiveness of the LM EMS as a whole.

In addition to activities identified above, LM will:

- Evaluate the need for passenger vehicles on an annual basis to determine if there is an opportunity to acquire electric or hybrid vehicles.
- Evaluate the need to provide onsite charging infrastructure on an annual basis to determine cost effectiveness for the government and the tax payer.

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10.0 Travel and Commute

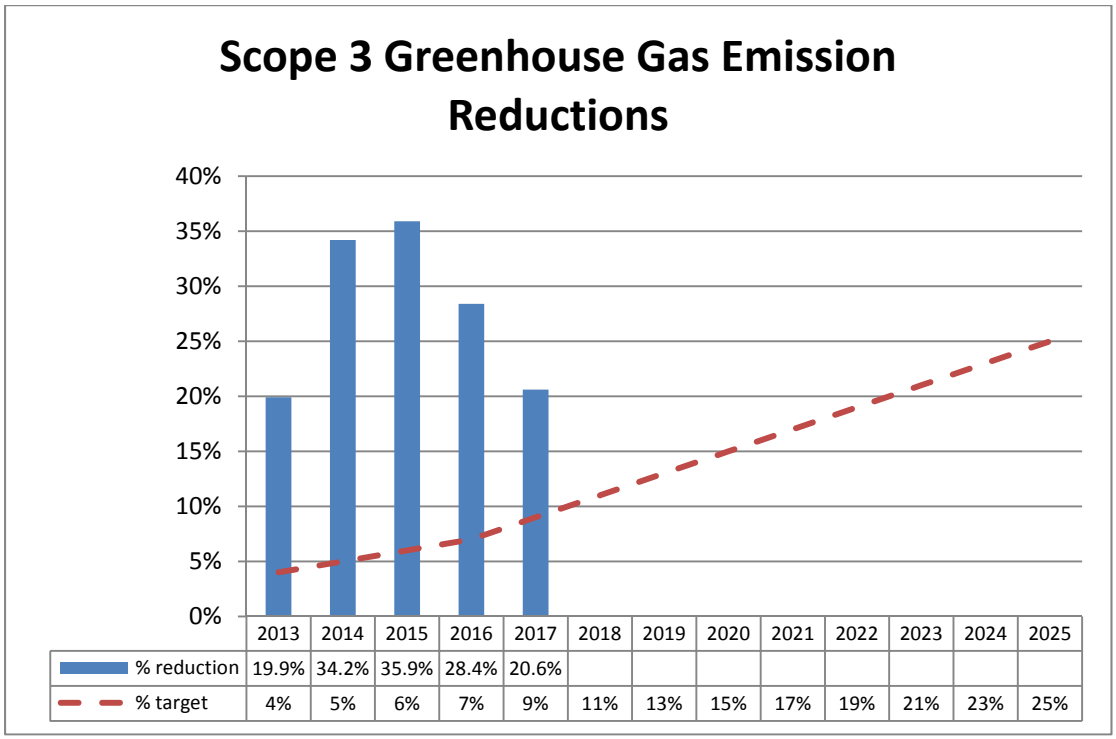
10.1 Goal 1.2: 25% Scope 3 GHG reduction by FY 2025 from a FY 2008 baseline. The interim reduction target for FY 2017 was 9%.

10.1.1 Travel and Commute Performance Status

LM exceeded this interim target by reducing Scope 3 GHG by 20.6%.

The increase in LM's scope and number of sites from present to FY 2025 may affect LM's ability to achieve this goal. As LM's number of sites grows and program activities expand, increased staff and air travel will be required. This will result in an increase in Scope 3 GHG emissions, which will make it more challenging for LM to achieve this annually increased GHG emission reduction goal.

LM continued to exceed the annual interim reduction target as shown in Figure 6, which presents data from FY 2013 through FY 2017 and shows annual Scope 3 GHG emissions progress toward the FY 2025 goal.



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
% reduction	19.9%	34.2%	35.9%	28.4%	20.6%								
% target	4%	5%	6%	7%	9%	11%	13%	15%	17%	19%	21%	23%	25%

Figure 6. Scope 3 GHG Emission Reductions vs. Annual Fiscal Year Targets

- LM conducted a new commuter survey in FY 2017 using a logic-based online survey system, which was needed to more accurately represent the changing LM workforce and to provide more precise survey results (see Attachment 6). LM used lessons learned from past commuter surveys to help make the FY 2017 survey more effective. Overall, LM observed that commuter mileage was higher than in FY 2016 (due largely to staffing increases) and

the number of commuter days decreased due to more employees participating in alternate work schedules and teleworking.

- LM continued to reduce business travel to the extent practical.
- LM used the following best management practices to reduce Scope 3 GHG emissions:
  - Reduced travel through the use of videoconference, teleconference, and instant messaging in place of in-person meetings. For example:
    - LM used the Cisco TelePresence Management Suite tracking and reporting tools to track videoconferencing and provide an estimated CO_2 savings report.
    - LM conducted its annual EMS management review via videoconferencing, which significantly reduces travel. Twenty-seven individuals participated from five different locations in FY 2017.
  - Consolidated trips by combining different functional activities, traveling only when necessary, and carpooling when possible. Where feasible, LM personnel shared business rental cars or used mass transit while attending out-of-town meetings and events.
  - Promoted carpooling, alternative work schedules, and work-from-home days, which can save transit time and reduce GHG emissions.
  - Sponsored onsite luncheons at some sites, as well as onsite, commercial food deliveries, which helped reduce personal vehicle use during lunch hours. In some cases, the LMS Employees' Association coordinated these events.
  - Used webinars to enhance job skills, as well as other seminars and training sessions provided by federal and state agencies and educational institutions, in place of in-person trainings. Examples include:
    - Federal Energy Management Program First Thursday Seminars
    - EPA training on Federal Facility Clean Air Act Requirements for Stationary Reciprocating Internal Combustion Engines (RICE)
    - ASHRAE: Using Analytics to Drive Building Performance

10.1.2 Travel and Commute Planned Actions and Projected Performance

With the following activities, LM expects to continue to reduce Scope 3 GHG emissions:

- Evaluate and implement ways to consolidate and reduce business ground and air travel.
- Encourage employees to carpool and use public transportation to the extent possible during their commute to work.
- Allow flexible workweeks to reduce commute time (i.e., four 10-hour days, five 9-hour days) and work to increase telecommuting options through mutual alternative work agreements that are designed to reduce commuting days.
- Pursue installation of additional renewable energy SOARs systems where cost effective, and maintain operation of the existing system, to help reduce travel.
- Evaluate commuter survey results to identify opportunities for improvement.

11.0 Measures, Funding and Training

11.1 Efficiency and Conservation Measures

11.1.1 Efficiency and Conservation Measures Performance

LM has not identified any projects that were large enough to meet the criteria for using an ESPC. Many of the LM sites are in remote locations and do not have facilities associated with them. In addition, projects are usually small in scale and not viable for an energy performance contract.

11.1.2 Efficiency and Conservation Measures Planned Actions and Projected Performance

LM will continue perform the following planned activities:

- Evaluate projects for use of an ESPC. Many of the LM sites are in remote locations and do not have facilities associated with them. Due to the nature of LM sites and activities, LM does not expect to contribute to DOE obtaining this goal.
- Prioritize and implement measures identified in audits. LM site leads and managers review audit reports and review select projects for implementing efficiency measures primarily by evaluating life-cycle costs of the project. The projects' initial goals include having a payback time that is 25 years or less. In addition, LM considers impacts to the environment and sustainability goals in this decision process. Energy team members will coordinate with managers, site leads and managers, and engineering staff to develop projects. LM accounting and technical staff review the most promising proposals in-depth.
- Reduce the number of deferred maintenance tasks identified for energy-consuming buildings and facilities annually, as funding allows. DOE Order 430.1C requires a physical condition assessment to be performed every 5 years for all DOE-owned and DOE-leased buildings and trailers, and as well as other structures and facilities.

11.2 Funding

11.2.1 Funding Performance

LM continued to use a multiyear sustainability budgeting plan to identify funds needed to approve projects in a timely manner and to facilitate data collection for multiple budget requests. The sustainability teams and site leads identified project costs for the sustainability budget and other related budget calls. With a 5-year look-ahead, LM identified major sustainability goals and related activities (e.g., water and energy evaluations, annual reporting events, data tracking) and projects that were necessary to achieve goals and track status. LM funded long-term sustainability projects in its site-specific budgets.

11.2.2 Funding Planned Actions and Projected Performance

LM will perform the following planned activities:

- Evaluate expanding usage of new technologies such as remote sensing, telemetry, and drone-based sensors with instruments to improve site monitoring efforts while reducing costs, natural resource use, and business travel–related GHG emissions, and achieve sustainability goals.
- Determine the cost-effectiveness of projects but also consider the implementation of new technologies for demonstration purposes, the facilitation of technology and information transfer, and the accomplishment of deferred maintenance tasks. This includes studying and applying cost-effective new technologies that enhance protectiveness.
- Continue to refine the scope and estimated implementation costs, evaluate funding sources for financial and technical rigor, and seek appropriate funding sources over the next 3 years for those projects that are life-cycle cost-effective. LM's next budget request will be updated to include projects that will allow sustainability goals to be met.
- Pursue additional training on costs, scheduling, estimating, and preparing return-on-investments and simple paybacks.
- Continue to examine reinvestment potential to use cost savings realized from sustainability efforts.

11.3 Appropriations and Direct Obligations

11.3.1 Appropriations and Direct Obligations Performance

LM's major sustainability efforts and their associated appropriations and direct obligations have been related to energy efficiency and renewable energy.

As best management practices, LM continued to:

- Perform return-on-investment reviews using the triple-bottom-line approach. This approach includes looking at not just the payback period but also social responsibility, economic prosperity, and environmental stewardship.
- Select projects primarily by evaluating life-cycle costs and return-on-investments reviews.
- Budget for the EMS, including sustainability, and smaller, specific EMS projects for 5 outyears during the life-cycle baseline budget process. LM identified the major sustainability goals and related activities (e.g., water audits or annual reporting events) and site-specific projects.

11.3.2 Appropriations and Direct Obligations Planned Actions and Projected Performance

LM plans to implement energy-efficiency projects through 2025 that could significantly reduce energy intensity compared to the 2015 baseline and Scope 1 and Scope 2 GHG emissions. Two main projects are the optimization of the groundwater treatment system at the Fernald Preserve site and the construction of a new interpretive center at the Weldon Spring site. In addition, LM will evaluate new projects for ESPC ENABLE initiatives during the planning process.

11.4 Training and Education

11.4.1 Training and Education Performance

Sustainability teams and environmental compliance staff worked with the EMS training team to update the EMS General Awareness training to address executive order changes and changes in the International Standard Organization (ISO) standard 14001, *Environmental management systems — Requirements with guidance for use*.

As best management practices, LM:

- Developed an EMS orientation training to provide more detailed information on the ISO 14001 standard, sustainability and environmental compliance requirements, and responsibilities for new employees.
- Developed and published sustainability awareness articles in the internal quarterly newsletter, *ECHOutlook*. Related posters, contests, and activities sometimes accompanied the articles to encourage sustainability-related behavior change.
- Delivered presentations with more specific discussion of the EO 13693 goals and needed actions to increase awareness at All-Hands meetings, monthly safety meetings, and meetings with management and project planning personnel.

11.4.2 Training and Education Planned Actions and Projected Performance

LM plans to continue to encourage and require staff to take training. In addition, LM will perform the following planned activities:

- Maintain the certified energy manager's certification.
- Continue to look into the Federal Facilities Management Training Tool for tracking core competencies to ensure facility energy managers can demonstrate their core competencies as identified by GSA per the Federal Buildings Personnel Training Act of 2010.

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12.0 Organizational Resilience

12.1 Goal 10.1: Update policies to incentivize planning for, and addressing the impacts of, extreme events due to changes in weather patterns.

12.1.1 Organizational Resilience Performance Status

LM met this goal. Current LM environmental and safety and health policies have been updated to address planning for the impacts of extreme events through work planning, hazard identification and control, working within controls, and continuous improvement.

In response to the requirements of DOE Order 151.1D, *Comprehensive Emergency Management System* (August 2016), LM's main initiative in FY 2017 was developing a joint LM/LMS Emergency Management team that reports to the LM Safety and Health department manager.

The Emergency Management Team developed a series of policies and procedures in accordance with DOE Order 151.1D, *Comprehensive Emergency Management System*, Attachment 1, *Contractor Requirements Document*, and Attachment 3, *Emergency Management Core Program*, Section 2, "All Hazards Planning Basis." Under this Order, an "All Hazards Approach" methodology is utilized for emergency planning, preparedness, response, mitigation, readiness assurance, and recovery activities in order to maintain acceptable levels of protection for the safety and health of employees, responders, and the public, property, and environment.

12.1.2 Organizational Resilience Planned Actions and Projected Performance

An "All Hazards Approach" methodology will be utilized for emergency planning, preparedness, response, mitigation, readiness assurance, and recovery activities in order to maintain acceptable levels of protection for the safety and health of employees, responders, and the public, property, and environment. In addition, LM will perform the following planned activities:

- The LMS Emergency Management Team will be implementing a series of policies and procedures that were developed in accordance with DOE Order 151.1D.
- The Applied Studies and Technology (AS&T) team will continue to use the SOARS data for real-time weather conditions to help LM scientists and engineers control values and pumping rates at remote sites as needed during or as a result of extreme weather events.
- Project planners will consider the potential impacts from extreme events on new construction or renovation projects such as the proposed new building at the Weldon Spring site and as feasible for the Atomic Legacy Learning Center project at the LM office at Grand Junction.
- The Climate Change Adaptation team will continue to evaluate SOARS data along with other weather pattern resources as part of the site vulnerability screening process.

The expected impact of planned actions is the implementation of a better integrated and more comprehensive approach to hazard analysis related to severe weather events at LM sites. The SOARS data will continue to provide overall cost savings to the program related to energy, water, and vehicle fleet management.

12.2 Goal 10.2: Update emergency response procedures and protocols to account for projected change, including extreme weather events.

12.2.1 Emergency Response Performance Status

LM updated the emergency response procedures and protocols to include All Hazards Surveys, which are designed to identify applicable hazards and to establish the planning basis for the emergency management program.

A new LM initiative is to perform an All Hazards Survey every 3 years from the date the last survey was issued, as well as when there are significant changes to site, facility, and activity operations or to hazardous material inventories. This survey is conducted using an "All Hazards Approach" methodology. This methodology ensures extreme weather events are accounted for along with all other hazards.

A Threat and Hazard Identification Risk Analysis (THIRA), required by the Department of Homeland Security, was incorporated into proposed procedures and protocols. THIRA is designed to assess natural, technological, and human hazards and extreme events including global warming. A THIRA risk assessment was conducted to evaluate hazards that could potentially impact LM sites. Hazards were assessed using an LM Site Risk Matrix and assigned risk levels based upon: (1) likelihood of occurrence, and (2) consequence for the safety and health of site workers and the pubic, the environment, and site operations. Hazards assigned risk levels of high, very high, or severe are addressed in the THIRA tables of the All Hazards Survey.

12.2.2 Emergency Response Planned Actions and Projected Performance

LMS contractor staff is required to perform an All Hazards Survey every 3 years from date of previous survey issuance, and when there are significant changes to site, facility, and activity operations or to hazardous material inventories. The objective of an All Hazards Survey is to identify applicable hazards and to establish the planning basis for the emergency management program. In addition, LM will perform the following planned activities:

- Continue to implement the updates identified in the revised *Emergency Management Program Description* and related documents.
- Perform a THIRA in accordance with an All Hazard Survey for LM sites to include the LM office in Westminster, which will be undergoing a major office move into a new leased space.
- Evaluate hazardous material inventories and ensure that updated emergency procedures and protocols are in place as applicable.

The expected impact of planned activities is a better understanding of hazards applicable to LM sites and better emergency response protocols. Since hazard surveys will need to be completed every 3 years and whenever there are major site changes, this will impact planning for future fiscal years.

12.3 Goal 10.3: Ensure workforce protocols and policies reflect projected human health and safety impacts.

12.3.1 Workforce Protocols Performance Status

LM updated workforce protocols to include occupant emergency plans and developed exercises to be used in FY 2018 to test the new procedures and capabilities of the program. Draft occupant emergency plans were developed for each LM site at which federal or contractor staff are permanently located (their duty station) per DOE Order 151.D to ensure site personnel can respond effectively and efficiently to all operational emergencies. The Draft Comprehensive Emergency Management System establishes the LM and LMS organizational structure and procedures for managing emergencies and other significant incidents that may occur.

DOE Order 151.1D requires each DOE location to develop and implement an integrated and comprehensive emergency management system to ensure they can respond effectively and efficiently to all operational emergencies. Occupant emergency plans contribute to this goal by identifying the emergency roles and responsibilities of site personnel, as well as specific actions to be taken before, during, and after an emergency, with the purpose of maintaining an acceptable level of protection for the safety and health of workers, the public, and the environment.

Each plan establishes the organizational structure and procedures for managing emergencies and other significant incidents that may occur. In addition to the nine site-specific occupant emergency plans, a tenth plan was drafted that serves as guidance for all unoccupied sites. Emergency Response Organizations were designated at each occupied site and were specifically trained on how to respond to emergencies. Emergency exercises were developed and tested at select LM sites. One exercise conducted at the LMBC was based on a severe weather event.

12.3.2 Workforce Protocols Planned Actions and Projected Performance

LM will issue occupant emergency plans for managing emergencies and other significant incidents that may occur. In addition, LM will perform the following planned activities:

- Continue occupant emergency plan training, especially for new employees.
- Continue to run drills and guided proctored discussions for potential emergency scenarios at LM occupied and unoccupied sites.
- Update the continuity of operations planning and procedure documents for all of the occupied LM sites.
- The Draft Comprehensive Emergency Management System will be finalized and tested in FY 2018.

The expected impact of planned activities is employees with increased awareness of site hazards and appropriate emergency response actions and a greater capacity for continuity of operations, which will provide cost savings in the event of an emergency.

12.4 Goal 10.4: Ensure site and lab management demonstrates commitment to adaptation efforts through internal communications and policies.

12.4.1 Communications and Policies Performance Status

LM demonstrated commitment to adaptation and resilience efforts through a variety of internal communications, new policy development, and continued support to ongoing initiatives.

LM either created or made changes to policies and operations based on the following directives:

- DOE Order 151.1D, *Comprehensive Emergency Management System*
- DOE Order 430.1C, *Real Property Asset Management*
- EOs 13693, *Planning for Federal Sustainability in the Next Decade*, and 13783, *Promoting Energy Independence and Economic Growth*

LM developed the new Emergency Management System and related draft documents as required by the DOE Orders. All LMS contractor employees received an Emergency Management System awareness briefing and completed required awareness training. The Asset Management team updated their *Real Property Management* manual to include the climate considerations element identified in DOE Order 430.1C and EO 13693. The Climate Change Adaption team updated documents and webpages in accordance with EOs 13693 and 13783. The Climate Change Adaptation team continued vulnerability evaluation efforts and provided updates to EMS documents and webpages. The Climate Change Adaptation team advocate provided a briefing to LM senior management. The AS&T team supported adaptation-related technical task plans. AS&T hosted a semiannual review and presented a status update of their ongoing studies in long-term disposal cell cover performance.

12.4.2 Communications and Policies Planned Actions and Projected Performance

LM will continue communicating adaptation and resilience efforts at various levels of the organization through a variety of presentations and articles. In addition, LM will perform the following planned activities:

- Climate Change Adaptation team advocate will provide a 2018 climate resilience briefing for LM senior management and the contractor teammates will present to LMS senior management.
- Climate Change Adaptation team will develop an article for the environmental compliance *ECHOutlook* employee newsletter.
- Environmental Compliance department staff will present a brief climate resilience presentation at one of the LMS contractor site safety meetings.
- The AS&T team will issue their annual report highlighting project efforts related to climate impacts and long-term surveillance and maintenance activities.

The expected impact of planned activities is an increased awareness of LM adaptation and resilience efforts and an increased understanding of how to meet the objectives and goals of the LM Strategic Plan over the next several years.

12.5 Goal 10.5: Ensure that site and lab climate adaptation and resilience policies and programs reflect best available current science, updated as necessary.

12.5.1 Best Available Current Science Performance Status

LM continued AS&T efforts designed to evaluate long-term disposal cover cell performance and other long-term impacts to protective remedies. The Climate Change Adaptation team began a pilot vulnerability screening for the Monticello site.

The major initiatives that drive LM goal performance in the areas of best available current science are the following:

- LM *2016–2025 Strategic Plan*
- 2016 DOE Secretarial Memorandum, *Climate Change Preparedness and Resilience*

LM's Strategic Plan requires consideration of weather and climate challenges posed to LM's long-term surveillance and maintenance efforts and remedy performance, potential impacts to occupied sites, and the overall threat to continuity of mission operations. The DOE Secretarial Memorandum requires site vulnerability screenings and determination of sites that may require further assessment. The AS&T program is the core of LM efforts to incorporate improvements in scientific understanding and advancements in technology into site management and remediation strategies. These strategies aim to improve remedy protectiveness, sustainability, and long-term cost effectiveness. AS&T conducts in-house studies and collaborates with other federal agencies, environmental communities, universities, national laboratories, and the international scientific community on other studies to evaluate and understand engineering and scientific advancements that may prove beneficial to LM. AS&T objectives are presented in the *Five-Year Plan for Applied Science and Technology (AS&T) FY 2013 Through FY 2017* (Five-Year Plan) and are directly aligned with the LM Strategic Plan. The AS&T annual report summarizing FY 2017 performance is in development. A small sample of their accomplishments include:

- Fourteen presentations of AS&T study results at eight conferences.
- Study results that were published in five LM reports.
- Collaboration on studies with 10 universities, government agencies, or national laboratories.

In accordance with the Secretarial Memorandum, the Climate Change Adaptation team applied the vulnerability screening guidance and used the screening tool provided by the DOE SPO to conduct a pilot vulnerability screening of the Monticello site. The DOE vulnerability screening tool was the result of best available screening and scoring strategies and included information from the 2014 National Climate Assessment issued by the United States Global Change Research Program, a collaborative effort of cutting-edge science from 13 different federal agencies and numerous scientific organizations. This effort provided valuable lessons learned for conducting future LM site vulnerability screenings.

The Climate Change Adaptation team advocate also attended a training hosted by the Association of Climate Change Officers in partnership with the National Renewable Energy Laboratory and the Colorado Water Conservation Board that focused on the implications of climate change with a focus on the Rocky Mountain region.

12.5.2 Best Available Current Science Planned Actions and Projected Performance

LM will continue to fortify efforts with scientific support to include climate adaptation and resilience considerations in 2018 activities. In addition, LM will perform the following planned activities:

- Continue ongoing AS&T program technical studies such as long-term cover performance and educational collaborations.
- Continue short-term AS&T studies with ongoing or new ancillary work plan requests such as technical studies, investigations, and white paper development.
- Complete the Monticello site vulnerability screening report and site team review.
- Develop a plan for additional LM site vulnerability screenings.

The expected impact of planned activities is an increased understanding of the effects of natural processes on engineered features, and how they can impact the effectiveness of remedies and long-term protectiveness as well as an increased understanding of how to conduct site vulnerability screenings.

Attachment 1

LM Environmental Policy

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U.S. DEPARTMENT OF ENERGY
Legacy Management

Procedure: 436.1C

Effective: 2/22/2017

SUBJECT: ENVIRONMENTAL POLICY

1. OBJECTIVE. This policy reaffirms the Department of Energy (DOE) Office of Legacy Management's (LM) commitment to protect and respect the environment through our environment, safety, health and quality (ESH&Q) programs and activities. Environmental protection is accomplished using an Environmental Management System (EMS).

2. CANCELLATION. Policy LM P 436.1a, *Environmental Policy*, dated 02-18-15.

3. APPLICABILITY. This Policy applies to all LM federal employees.

4. REQUIREMENTS. LM will pursue their activities in accordance with

   - DOE Policy 450.4A, *Integrated Safety Management Policy* and DOE Order 450.2, *Integrated Safety Management*, and
   - DOE O 436.1, *Departmental Sustainability*.

   It is DOE's policy that work be conducted safely and efficiently and in a manner that ensures protection of workers, the public, and the environment. Safety, which is synonymous with environment, safety, and health (ES&H), should be systematically integrated into management and work practices at all levels, so that missions are accomplished efficiently and sustainably while protecting the workers, the public, and the environment.

5. RESPONSIBILITIES. It is the responsibility of all LM personnel to support this environmental policy and contribute to the effectiveness of our EMS.

   Management will ensure that this policy and our EMS

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- Are effective,
- Integrated into all processes, and
- Achieve their intended outcomes.

Management will communicate these expectations to all LM personnel, stakeholders, and the public. Management will annually review this policy, ensuring updates as necessary.

6. POLICY. LM has diverse strategic goals that support our mission to "fulfill the Department's post-closure responsibilities and ensure the future protection of human health and the environment." In support of our mission and goals, proper management of the impacts of our operations and facilities on the environment, now and into the future, is essential.

With this policy, LM is pledging to protect the environment by maintaining and continually improving our EMS. LM will meet its environmental objectives to

- Fulfill all applicable environmental compliance obligations,
- Prevent pollution,
- Protect biodiversity and ecosystems and account for climate change in LM operations and facility activities,
- Continue to make environmental protection, sustainable resource use, safety, and health an integral part of our day-to-day decision-making and long-term planning processes, and
- Seek news ways to improve our environmental performance.

Our EMS is a structured system that ensures LM meets its environmental objectives and helps LM identify areas of improvement. LM's EMS includes the following components:

- Setting objectives to sustainably continue our environmental stewardship
- Establishing policies and implementing procedures to perform effective long-term surveillance and maintenance (LTS&M), meet or exceed environmental objectives and obligations, adequately control documents, ensure proper training, and communicate with our internal and external stakeholders,
- Tracking and auditing performance, and
- Reviewing our performance and identifying opportunities to do better.

LM evaluates our environmental performance using the following:

- Annual reviews of progress on environmental objectives which are summarized in the LM Site Sustainability Plan,
- Annual EMS Management Reviews,
- Audits by external parties to evaluate our conformance,
- Quarterly review of progress toward meeting performance goals, and
- Quarterly oversight assessments.

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7. REFERENCES.
   a. DOE Order 436.1, *Departmental Sustainability*.
   b. DOE Order 450.2, *Integrated Safety Management*.
   c. DOE P 450.4A, *Integrated Safety Management Policy*.
   d. International Organization for Standardization, *Environmental Management Systems – Requirements with Guidance for Use* (ISO 14001:2015).

Approved: _____
Carmelo Melendez
Director
Office of Legacy Management

INITIATED BY: Office of Site Operations
NO. OF PAGES/ATTACHMENTS: 3 pages, 0 attachment

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Attachment 2

LM Sustainability Dashboard Comprehensive Scorecard

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Comprehensive Scorecard

Under Secretary for Management & Performance
Office of Legacy Management
---Legacy Management Sites
FY 2017 (tentative)

Greenhouse Gas Inventory

Scope 1 & 2 Greenhouse Gas Emissions

Goal: Reduce direct GHG emissions by 50 percent by FY 2025 relative to FY 2008 baseline. Interim Target (FY 2017): -25.0 %

Current Performance: -48%

	FY 2008	FY 2017	% Change
Facility Energy	5,357.1	3,545.9	-33.8%
Non-Fleet V&E Fuel	0.0	38.0	N/A
Fleet Fuel	293.5	250.8	-14.5%
Fugitive Emissions	0.0	5.8	N/A
On-site Landfills	0.0	0.00	N/A
On-site WWT	3.1	5.4	74.2%
Renewables	0.0	0.00	N/A
RECs	0.0	-891.6	N/A
Total (MtCO2e)	**5,653.7**	**2,954.4**	**-47.7%**

Scope 3 Greenhouse Gas Emissions

Goal: Reduce indirect GHG emissions by 25 percent by FY 2025 relative to FY 2008 baseline. Interim Target (FY 2017): -9.0 %

Current Performance: -20%

	FY 2008	FY 2017	% Change
T&D Losses*	349.1	162.3	-53.5%
Air Travel	774.5	273.2	-64.7%
Ground Travel	145.2	121.7	-16.2%
Commute	838.5	1,108.9	32.2%
Off-site MSW	96.8	94.0	-2.9%
Off-Site WWT	1.0	0.00	-100.0%
Total (MtCO2e)	**2,205.1**	**1,760.2**	**-20.2%**

* Includes T&D losses for purchased renewable electricity and T&D credits from RECs

Facilities

Energy Intensity

Goal: The latest energy intensity reduction goal, requires a reduction in energy intensity for goal subject facilities by 25 percent by FY 2025 relative to FY 2015 baseline. The prior goal, required a 30 percent reduction by FY 2015 relative to FY 2003 baseline. Interim Target (FY 2017): -5.0 %

Current Performance: -3%

	FY 2015	FY 2017	% Change
Purchased Utilities (MMBtu)	5,594.9	5,363.4	-4.1%
Purchased Renewables (MMBtu)	0.0	0.0	N/A
Goal-subject GSF	38,878.0	38,408.0	-1.2%
Energy Intensity (Btu/GSF)	**143,909.9**	**139,641.7**	**-3.0%**

Renewable Electricity

Goal: By FY 2025, use 30 percent renewable energy as a percentage of overall facility electricity use. Interim Target (FY 2017): 10 %

Current Performance: 50%

	FY 2017 Electricity Consumption	FY 2017 Renewable Electricity w/ Bonuses	% of Total
Grid Electricity	4,068	0.00	N/A
On-Site Renewable Energy	697	1,393	29.2%
Purchased Green Electricity	0	0.00	N/A
Renewable Energy Certificates	N/A	1,005	21.1%
Total (MWh)	**4,765**	**2,398**	**50.3%**

Clean Energy

Goal: By FY 2025, use 25 percent renewable energy as a percentage of overall facility electric and thermal energy use. Interim Target (FY 2017): 10.0 %

Current Performance: 49%

	FY 2017 Energy Consumption	FY 2017 Clean Energy w/ Bonuses	% of Total
Grid Electricity	13,879	0.00	N/A
Non-renewable Thermal Energy	312	0.00	N/A
On-Site Renewable Energy	2,377	4,753	200.0%
Purchased Green Electricity	0	0.00	N/A
Renewable Energy Certificates	N/A	3,428	N/A
Total (MMBtu)	**16,568**	**8,181**	**49.4%**

Potable Water Intensity

Goal: Reduce potable water intensity by 36 percent by FY 2025 relative to FY 2007 baseline. Interim Target (FY 2017): -20.0 %

Current Performance: -59%

	FY 2007	FY 2017	% Change
Water Consumption (million gal)	1.5	0.4	-73.3%
Aquifer Recharge (million gal)	0.0	0.0	N/A
Total GSF	69,790.0	41,914.0	-39.9%
Water Intensity (Gal/GSF)	**21.5**	**8.8**	**-59.1%**

Industrial, Landscaping, Agricultural Water

Goal: Reduce industrial, landscaping and agricultural water use by 30 percent by FY 2025 relative to FY 2010 baseline. Interim Target (FY 2017): -14.0 %

Current Performance: -100.0%

	FY 2010	FY 2017	% Change
Industrial	0.5	0.0	-100.0%
Landscaping	0.0	0.0	N/A
Agricultural	0.0	0.0	N/A
Total ILA Water (million gal)	**0.5**	**0.0**	**-100.0%**

High Performance Sustainable Buildings

Goal: Ensure 17 percent by building count comply with the Guiding Principles for sustainable buildings by FY 2025. Interim Target (FY 2017): 15.0 %

Current Performance: 45.5%

	Building Count	GSF
Guiding Principles Certified	5	75,349
Total Applicable*	11	486,991
Performance (%)	**45.45%**	**15.47%**

* Applicable means buildings and trailers that are DOE owned or DOE leased where the gross/rentable SqFt is greater than 5,000.

Fleet

Fleet Greenhouse Gas Emissions/Mile

Goal: Reduce per-mile greenhouse gas emissions by 30 percent by FY 2025 relative to FY 2014 baseline

Interim Target (FY 2017): -4.0 %

Current Performance: -13%

	FY 2014	FY 2017	% Change
Fleet Fuel GHG (MtCO2e)	228.6	250.8	9.7%
Fleet Miles (x1000)	363.2	456.4	25.7%
Greenhouse Gas Emissions / Mile (gCO2e/Mile)	**629.0**	**550.0**	**-12.6%**

Fleet Petroleum

Goal: Reduce fleet petroleum use by 20 percent by FY 2015 and thereafter relative to FY 2005 baseline

Interim Target (FY 2017): -20.0 %

Current Performance: 2%

	FY 2005	FY 2017	% Change
Gasoline	27,213	23,577	-13.4%
Diesel	0	4,191	N/A
Biodiesel*	0	0	N/A
Total Petroleum (GGE)	**27,213**	**27,768**	**2.0%**

* Includes only the diesel content of B20

Fleet Alternative Fuel

Goal: Increase fleet alternative fuel use by 10 percent by FY 2015 and thereafter relative to FY 2005 baseline

Interim Target (FY 2017): 10.0 %

Current Performance: -23%

	FY 2005	FY 2017	% Change
E-85	3,078	2,383	-22.6%
Biodiesel*	0	0	N/A
CNG	0	0	N/A
Other*	0	0	N/A
Total Alternative (GGE)	**3,078**	**2,383**	**-22.6%**

* Biodiesel contains B100 plus the biodiesel content from B20. Other contains LNG, LPG, and electric

Waste

Municipal Solid Waste Diversion

Goal: Divert at least 50 percent of non-hazardous solid waste (excluding construction and demolition debris)

Interim Target (FY 2017): 50.0 %

Current Performance: 51%

	FY 2017	%
Off-Site Landfills	98.1	48.9%
On-Site Landfills	N/A	N/A
Waste to Energy*	0.0	0.0%
Non-diverted Waste	***98.1***	***48.9%***
Diverted Waste	102.5	51.1%
On-site composted	0.0	0.0%
Off-site composted	0.0	0.0%
Total Diverted Waste	***102.5***	***51.1%***
Total Waste (metric tons)	**200.6**	**100.0%**

* For E.O. 13693, waste to energy does not count as diverted waste

Construction & Demolition Diversion

Goal: Divert at least 50 percent of construction and demolition materials and debris

Interim Target (FY 2017): 50.0 %

Current Performance: 13%

	FY 2017	%
Landfilled C&D Waste	520.4	86.9%
Diverted C&D Waste	78.1	13.1%
Total C&D Waste (metric tons)	**598.5**	**100.0%**

Electronics

Electronics Acquisition

Goal: 100 percent of eligible electronics procurements must be environmentally sustainable (e.g. EPEAT)

Interim Target (FY 2017): 95.0 %

Current Performance: 100%

	EPEAT Acquired	Total Acquired	%
Monitors	152	153	99.3%
Computers	215	215	100.0%
Imaging Equipment	8	8	100.0%
Televisions	0	0	N/A
Total Acquired	**375**	**376**	**99.7%**

Electronics Recycling

Goal: Dispose of 100 percent of electronics through government programs and certified recyclers

Interim Target (FY 2017): 100.0 %

Current Performance: 100%

	Amount	%
Transferred or Donated	1.018	27.1%
Recycled by Certified Recycler	2.746	73.0%
Recycled by non-Certified Recycler	0.000	0.0%
Amount disposed (e.g. landfill)	0.000	0.0%
Total Electronics Waste (metric tons)	**3.764**	**100.0%**

Power Management

Goal: Implement and actively use power management features on 100 percent of eligible computers (PCs & laptops) and monitors

Interim Target (FY 2017): 100.0 %

Current Performance: 100%

	Total Owned	PM Enabled	Exempt	%
Monitors	826	826	0	100.0%
Computers	632	595	37	100.0%
Total Items	**1,458**	**1,421**	**37**	**100.0%**

Duplex Printing

Goal: Implement and actively use duplex printing features of 100 percent of eligible printers

Interim Target (FY 2017): 100.0 %

Current Performance: 100%

	Total Owned	Duplex Enabled	Incapable	%
Total Printers	69	69	0	100.0%

Acquisition

Sustainable Acquisition

Goal: Ensure 95 percent of new contract actions for products and services meet sustainable acquisition requirements

Interim Target (FY 2017): 95.0 %

Current Performance: 100%

	Contracts Reviewed	Contracts Without Opportunity	Contracts Meeting All Requirements	%
Number of Contracts	33	0	33	100.0%

Attachment 3

LM Excluded Building Certification Letter

(FY 2017 Excluded Building List report generated on November 27, 2017, for self-certification)

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Department of Energy
Washington, DC 20585

DOE BUILDING EXCLUSION
SELF-CERTIFICATION FORM
FY 2017

FROM: Office of Legacy Management

TO: Sustainability Performance Office

DATE: November 27, 2017

SUBJECT: SELF-CERTIFCATION FORM FOR THE ENERGY INTENSITY GOAL OF EISA 2007

Each buildings or group of buildings excluded under the criteria for a Part B, Part C, or Part D exclusion is/are metered for energy consumption and their consumption is reported annually.

I certify that the buildings listed on the EUI Excluded Facilities report produced by the Dashboard as dated November 21, 2017 for Office of Legacy Management meet the exclusion criteria in *Guidelines Establishing Criteria for Excluding Buildings* published by FEMP on January 27, 2006.

Budimir V. Sokolovich, Senior Realty Officer
DOE Office of Legacy Management Official

2017.11.22
10:40:52 -07'00'

DOE Office of Legacy Management Official (signature) Date

Contact Information for Office of Legacy Management building exclusions:

Name: Tracy Ribeiro
Title: Environmental Program Manager
Phone: (303) 410-4817
E-mail: tracy.ribeiro@lm.doe.gov

cc:
T. Ribeiro, DOE-LM (e)
File: ADM 0030.10 (records)

Mgrs\Ribeiro\11-7-17 2017 Self-Cert Energy Intensity Goal of EISA 2007

Printed with soy ink on recycled paper

Property Programs Office	Property Name	Property ID	Real Property Unique ID	Property Type	Ownership	Gross SqFt	Excluded Facilities SqFt	Exclusion Part	Exclusion Justification Comment
LM	99 Research Park Road - Morgantown	AWV01804 FER-BLDG-	207229	Building	GSA Leased (L)	58990	58990	C - Fully Serviced Lease	GSA Leased - Fully Serviced
LM	DELTA BUILDING	OFFICE	203707	Building	DOE Leased (D)	10408	10408	C - Fully Serviced Lease	Lessor pays all utilities
LM	RTC LEASE-BUILDING G12	GJO-BLDG-B12	208138	Building	DOE Leased (D)	11753	11753	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BUILDING G2	GJO-BLDG-B2	208140	Building	DOE Leased (D)	2263	2263	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BUILDING G32	GJO-BLDG-B32	208137	Building	DOE Leased (D)	4741	4741	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BUILDING G810	GJO-BLDG-B810	204554	Building	DOE Leased (D)	23206	23206	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BUILDING G938	GJO-BLDG-B938	208135	Building	DOE Leased (D)	19182	19182	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BUILDING 46	GJO-BLDG-B46	211272	Building	DOE Leased (D)	3890	3890	C - Fully Serviced Lease	Full Serviced Lease
LM	RTC LEASE-LOG CABIN	GJO-BLDG-CABIN	216249	Building	DOE Leased (D)	3231	3231	C - Fully Serviced Lease	Fully serviced lease
LM	STAR CTR OFFICE PORTION OF LEASE	PIN-BLDG-OFFICE	143457	Building	Contractor Leased (C)	1330	1330	C - Fully Serviced Lease	Fully serviced lease
LM	WESTMINSTER OFFICE SPACE LEASE	WST-BLDG-OFFICE	204031	Building	DOE Leased (D)	19010	19010	C - Fully Serviced Lease	Fully Serviced Lease
				subtotal fully serviced lease		158004			
LM	SINGLE WIDE TRAILER - ERSP	RFO-TRLR-ERSP	207375	Trailer	Contractor Leased (C)	672	672	B - Privately Owned	Rental Agreement
LM	EQUIPMENT STORAGE SHED	RPS-BLDG-EQUIPSTOR	140115	Building	DOE Owned (O)	1118	1118	D - Essentially Only Lighting	Solar panels provide power to lights only inside structure.
LM	STORAGE SHED BUILDING 2A	GJO-BLDG-STORSHED	207408	Building	DOE Owned (O)	336	336	D - Essentially Only Lighting	Building is DOE-owned, however, power source comes from utility line from other leased facilities and is paid through fully serviced leased contract on other leased buildings. Shared meter.
LM	STORAGE SHED1	MNT-BLDG-STORSHED1	208090	Building	DOE Owned (O)	260	260	D - Essentially Only Lighting	Shed only uses minimal lighting. Shared meter.
LM	STORM SHELTER	WEL-BLDG-STORMSHELTR	215411	Building	DOE Owned (O)	560	560	D - Essentially Only Lighting	Solar panels provide power only to lights inside structure.
LM	STORM SHELTER 2	WEL-BLDG-STORMSHLTR2	216164	Building	DOE Owned (O)	560	560	D - Essentially Only Lighting	Solar panels provide power only to lights inside structure.
				subtotal other exclusions		3506			
					Total	161510			

Attachment 4

LM Water Conservation Plan

This attachment is a section out of the *Environmental Management System Sustainability Teams Manual*, which is scheduled to be updated to Executive Order 13693 and the revised EMS standard 14001:2015 in the first quarter of calendar year 2018, along with the rest of the manual.

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4.0 Water Conservation Plan

The Water Conservation (WC) Team promotes the conservation of water resources through efficiency and reuse management at LM sites and office locations.

4.1 Purpose

The purpose of this EMS WC Team implementation plan is to establish a systematic approach for managing potable water and nonpotable freshwater conservation at applicable LM sites that is in compliance with EO 13423, EO 13514, DOE Order 436.1, and other applicable regulations (e.g., EISA, EPAct, and NECPA).

4.2 Scope

The scope addresses the management of water use, loss, waste, and reuse at applicable LM sites. This plan provides a system for (1) measuring and tracking potable water-use-intensity; (2) measuring and tracking industrial, landscaping, and agricultural nonpotable water consumption; (3) identifying and prioritizing efficiency improvement opportunities; (4) implementing approved efficiencies; (5) determining and reporting performance toward program goals and requirements; and (6) supporting numerous federally mandated data calls and report submittals.

EO 13423 and EO 13514 mandate that all federal agencies, beginning in 2008, reduce the intensity of potable water consumption relative to the baseline of the potable water use in FY 2007 by a minimum of 2 percent annually through the end of FY 2020, or a minimum of 26 percent by the end of FY 2020. EO 13514 mandates that all federal agencies reduce the consumption of nonpotable freshwater used for industrial, landscaping, and agricultural purposes relative to the baseline of the water use in FY 2010 by a minimum of 2 percent annually through the end of FY 2020, or a minimum of 20 percent by the end of FY 2020. Additionally, the identification, promotion, and implementation of water reuse strategies that reduce potable water consumption are required.

Applicable LM sites that are subject to compliance with these EO goal requirements are referred to as Goal Metrics sites, which include all LM sites or portions of sites that meet the following criteria:

- Water (either potable, nonpotable freshwater, or both) is used at the site; and
- The site is owned by the federal government under LM jurisdiction and control (owned by LM) and operated by LM or its prime contractor; or
- The site is owned by LM and, although the site is leased to another entity, LM or the LMS contractor directly pays the water utility bill; or
- The site is owned by another entity and leased by LM or its prime contractor, and LM or its LMS contractor directly pays the water utility bill.

The following areas are excluded from the scope of WC:

- Water management activities associated with groundwater and surface water monitoring and remediation
- Bottled water consumption
- The management and protection of surface water, including storm water, and groundwater quality; (this is addressed in the *Environmental Protection Manual*)

Guidance provided in (1) *Instructions for Implementing Executive Order 13423* (CEQ 2007), (2) *Establishing Baseline and Meeting Water Conservation Goals of Executive Order 13423* (DOE 2008), and (3) the water-efficiency best management practices published by DOE FEMP (DOE 2014) were used to prepare this procedure.

4.3 Procedure

4.3.1 Site Categorization

An initial evaluation was performed for each LM site to determine if it met the inclusion criteria identified in Section 4.2, to obtain relevant water-use data, and to identify how each site is categorized. The site category is used to determine the applicability of the WC requirements. Categories include the following:

- **Non-WC site:** This category designation applies to LM sites that do not use either potable or nonpotable water. Further application of the WC implementation plan is not relevant at non-WC sites.
- **General site:** This category designation applies to any LM site (or portions of a site) where water, either potable or nonpotable freshwater, is used, but where the site does not meet the Goal Metrics Program site-inclusion criteria identified in Section 4.2. The procedures identified in Section 4.3.2 may be relevant at these sites.
- **Goal Metrics site:** This category designation applies to any LM site (or portions of a site) that meets the Goal Metrics site-inclusion criteria identified in Section 4.2. The procedures identified in Section 4.3.3 are applicable at these sites.

A master list identifying how each LM site is categorized was generated and is maintained for reference. A review of the initial site determination will be performed if there are changes to the operations, activities, or programmatic objectives at an existing LM site. An initial evaluation will be performed for each newly transitioned LM site to determine the site's WC category.

4.3.2 General Sites

The following overarching WC components may be relevant at general sites as a best management practice.

- The preferential purchase of water-efficient products and services that use sustainable environmental practices is required. When applicable, WaterSense (EPA 2014b) products should be purchased, and irrigation contractors who are certified through a WaterSense-labeled program should be procured. EO 13514 requires that sustainable acquisitions be advanced to ensure that 95 percent of new contract actions (including task and delivery orders) are water-efficient. This requirement is implemented through the Sustainable Acquisition implementation plan (see Section 5.0).

- All new construction and existing building renovation activities must follow the water-use-efficiency criteria established by the EMS Sustainable Buildings Team. This applies to buildings and landscaping. This requirement is implemented through the EMS Sustainable Buildings implementation plan (see Section 7.0).
- To the greatest extent practicable, LM must include a preference for buildings that have attained Leadership in Energy and Environmental Design (LEED) Gold certification, with emphasis on water efficiency in the selection criteria for acquiring leased buildings. When entering into renegotiations or extensions of existing leases, LM must include lease provisions that support the guiding principles for sustainable buildings, as identified by the EMS Sustainable Buildings Team (see Section 7.0).
- The identification and implementation of other water-efficiency initiatives are potentially relevant at general sites, depending upon the site circumstances. Because LM's control over water use at non–Goal-Metrics sites is limited, and because efficiency improvements do not count toward LM's water reduction goals, such initiatives at non–Goal-Metrics sites are not generally considered a priority, and will be pursued on a case-by-case basis as appropriate and approved. Such initiatives might apply to the following subject areas:
  - Promote actions, as appropriate, to reduce the use of both potable water and nonpotable freshwater, including that used in industrial, landscaping, and agricultural activities, through the application of water-efficient equipment and practices.
  - Promote, as appropriate, the use of nonpotable water sources, such as reclaimed, recycled, and gray water, for appropriate application.
  - Participate in the EMS media campaign to communicate the water efficiency goals to the workforce to motivate employees to become more efficient in their use of water.
  - Network with other DOE programs, federal agencies, and private entities to facilitate the exchange of water conservation ideas and information, to share resources, and to promote continual improvement.
  - Participate in the LMS contractor employee incentive program to reward exceptional performance, by teams or individuals, associated with water conservation improvements.

4.3.3 Goal Metrics Sites

Six LM sites are categorized as Goal Metrics sites. These are the Fernald, Ohio, Site; the Rifle, Colorado, Processing (Old) Site; the Grand Junction, Colorado, Disposal Site; the Monticello, Utah, Disposal and Processing Sites; the Tuba City, Arizona, Disposal Site; and the Weldon Spring, Missouri, Site.

In addition to the components identified for general sites in Section 4.3.2, the following procedures apply at Goal Metrics sites.

4.3.3.1 Metrics Applicability

The metrics that are applicable to Goal Metrics sites, including baseline development, metrics tracking, performance assessment, and reporting, are discussed in Section 4.4.

4.3.3.2 Initial Water System Screening

The WC Team conducted an initial water system screening at each Goal Metrics site to gather the preliminary information necessary to identify metering needs, develop the metrics baselines, and prioritize future WC audits and efficiency improvement initiatives. The information obtained from the screening contains details on site contacts; current water use operations, activities, and practices; metering locations; the gross square footage of buildings (as applicable); maps; and information on water utility payment processes and contracts.

4.3.3.3 Metering

With the exception of the Rifle Old processing site, standard water use meters are used at all Goal Metrics sites to ensure the adequate collection of potable water use data. It was determined that the addition of a meter at the Rifle Old processing site would not provide an appreciable benefit because it would not improve the accuracy of the site's use data, which is tracked by volume of potable water delivered to the site, because the site is only used intermittently and is a minimum water user.

Water meters have been placed at all of the other Goal Metrics sites to measure volumes of potable water used. Potable water used at portions of sites that are not included in the Goal Metrics is not captured by the metering.

EISA 2007 requires that at the Tuba City site, the quantity of nonpotable water used is measured by the meter at the wellhead. Quantities of nonpotable freshwater used at other sites are tracked using different methods, such as tracking the volume of water hauled for use, depending upon the circumstance. Nonpotable freshwater use generally occurs for temporary construction projects.

4.3.3.4 Audits

EISA 2007 requires that 25 percent of the Goal Metrics site facilities be evaluated annually for water in a manner that ensures that an evaluation of each facility is completed at least once every 4 years. The WC Team maintains a schedule of planned audits and reports the status of the audits annually.

4.3.3.5 Water Management Plans

On the basis of results of a Goal Metrics site's initial water evaluation or WC audit, a water management plan may be developed to identify opportunities to improve water use efficiencies and to minimize water loss and waste, as necessary. The plan should be detailed and should identify specific implementation milestones necessary for achieving the overall EO goals. Proposed operational, maintenance, processing, and technological improvement options (including retrofitting or replacing equipment) will be evaluated using water-efficiency-opportunity assessments. The plan should use a variety of water management strategies and tools to meet the goals, and, at a minimum, it should include the water-efficiency best management practices published by DOE FEMP (DOE 2014) on their website.

Water-efficiency opportunities should fully assess the systematic scope, impacts, and benefits associated with any proposed improvements. The WC Team will recommend appropriate efficiency-improvement initiatives to LM for approval prior to implementation. Recommended water-efficiency initiatives should be life-cycle cost-effective. Initiatives with the greatest potential percentage of efficiency gain or circumstantial need will be given WC priority.

4.3.3.6 Efficiencies Implementation

The WC Team will implement approved efficiency measures as appropriate.

4.3.3.7 Efficiency Tracking and Reporting

The WC Team will track and report implemented performance improvements.

4.4 Metrics

Two WC metrics apply to Goal Metrics sites: (1) potable water use intensity (WUI) tracking and (2) industrial, landscaping, and agricultural use tracking of nonpotable freshwater.

4.4.1 Total Potable Water Use Intensity Tracking

4.4.1.1 Baseline Establishment and Data Tracking

The LM potable WUI metrics baseline was established using the cumulative total FY 2007 potable water use and cumulative building-size data from all Goal Metrics sites. Specifically, the baseline is defined as the cumulative-sites total gallons (Tgal) of potable water used per building square foot during FY 2007. The baseline potable WUI number was calculated by dividing the cumulative fiscal year annual potable water-use total from all Goal Metrics sites by the cumulative total building GSF from all Goal Metrics sites.

This is represented as:

$$B_{(GMPS)} = WUI_{(B)} = \frac{Tgal_{(GMPS-07)}}{SG_{(GMPS-07)}}$$

where:

$B_{(GMPS)}$ = LM cumulative Goal Metrics sites total potable water baseline for FY 2007 (i.e., gallons per building square foot)

$WUI_{(B)}$ = total potable WUI number (baseline)

$Tgal_{(GMPS-07)}$ = cumulative Goal Metrics sites total gallons of potable water used in FY 2007

$SG_{(GMPS-07)}$ = cumulative Goal Metrics sites total building gross square footage in FY 2007

The WUI number is used as a basis of comparison for determining future performance toward the minimum potable WUI reduction goal of 2 percent annually or 26 percent by the end of FY 2020.

Metered data was used to establish the baseline, when possible. In the absence of metered data, data from the local water suppliers were used. In instances where potable water data were not available, potable water-use data were estimated using significant factors such as the number of employees, the amount of irrigated acreage, and water processes. Assumptions and estimating techniques were documented to ensure consistency in data acquisition and comparison.

Relevant potable water-use data are collected from each site and managed in a Microsoft Excel spreadsheet. Tracked data include gallons of potable water used, water source locations, periods of use, sources of data, and changes to building gross square footage. The spreadsheet is used to manage data for both the baseline and performance periods.

Note

This information is maintained on the EMS Sustainability SharePoint site with limited access for control purposes.

Table 2 provides an example of the database table used for a Goal Metrics site's potable water data tracking.

Table 2. Example Table for Tracking Potable Water Use by Site

LM Goal Metrics Site Name: _____						
Specific Potable Water Source Location[a]	Total Amount of Potable Water Used in Reporting Period (Gallons)	Source of Use Data	Reporting Period Dates[b]		Any Changes to Square Footage of Buildings During This Reporting Period? (Yes/No– explain Yes)	Comment
			Start Date (mm/dd/yy)[c]	End Date (mm/dd/yy)[c]		
Location #1:						
Location #2:						
Total Potable Water Use at Site in Fiscal Year from All Locations: Gallons						

[a] List all separate source locations for each specified Goal Metrics site (e.g., all meters or utility bills). Insert additional rows as needed.
[b] Ensure that data are represented for each day of the reporting period and that no date gaps occur between reporting periods.
[c] (mm/dd/yy) = month/day/year

The baseline data are not adjusted in outyears. The addition or removal of a large building or a site from the program in subsequent years is reflected in a change to that year's use intensity number.

Individual Goal Metrics site baseline WUI numbers can also be calculated to allow for separate site performance analysis.

4.4.1.2 Performance Determinations

Performance toward meeting the potable WUI reduction goal is based on an annual fiscal-year performance period and a cumulative performance period (from FY 2008 through FY 2020). A WUI number for LM Goal Metrics sites will be calculated for each performance period. The calculated change in percentage, as compared to the baseline, will be used to determine potable WUI improvement performance. The change in percentage will be calculated by dividing the difference between the baseline WUI and the performance period WUI by the baseline WUI, multiplied by 100.

This is represented as:

$$\Delta\% = \frac{WUI_{(B)} - WUI_{(P)}}{WUI_{(B)}} \times 100$$

where:

$\Delta\%$ = change in percentage (for performance period)
$WUI_{(B)}$ = potable WUI number (baseline)
$WUI_{(P)}$ = potable WUI number (during a set performance period)

The resulting percentage must be a positive value to indicate that potable WUI has improved (i.e., that a reduction has occurred).

The potable water reduction goal must be achieved at the DOE-complex–wide level. As necessary, corrective-action measures will be recommended and implemented to address deficiencies toward achieving the overall LM potable water-use-intensity reduction goal.

4.4.2 Nonpotable Freshwater Industrial, Landscaping, and Agricultural Use Tracking

4.4.2.1 Baseline Establishment and Data Tracking

This data tracks nonpotable freshwater, in gallons, used cumulatively at all the Goal Metrics sites for three categorical uses: industrial, landscaping, and agricultural. FY 2010 was the baseline period for this metric. This metric does not represent intensity, so building gross square footage does not factor into the metric's equation. The baseline number will be used for determining future performance toward the reduction goal.

Currently, these use categories are not separately metered at the Goal Metrics sites. If necessary, use per category is estimated as a percentage of the nonpotable water use by site. Significant factors such as periods of use, amount of irrigated acreage, and plumbing line diameters will be considered when determining the percentage of nonpotable water used by these categories at a site. Assumptions and estimating techniques will be documented to ensure consistency in data acquisition and comparison.

Relevant nonpotable freshwater-use data will be collected from each site and managed in a database. Tracked data include gallons of nonpotable freshwater by use category and source locations. The database will be used to manage data for both the baseline and performance periods. A database table similar to Table 2 will be used for a Goal Metrics site's nonpotable freshwater data tracking.

The cumulative Goal Metrics site baseline total nonpotable freshwater industrial, landscaping, and agricultural use was calculated to determine overall LM performance toward the reduction goal. Individual Goal Metrics site baseline nonpotable freshwater industrial, landscaping, and agricultural total use will also be calculated to allow for separate site performance analysis.

4.4.2.2 Performance Determinations

Performance toward meeting the total nonpotable freshwater use reduction goal for the industrial, landscaping, and agricultural use categories is based on an annual fiscal-year performance period and a cumulative performance period (from FY 2011 through FY 2020). The nonpotable water use for industrial, landscaping, and agricultural purposes for LM Goal Metrics sites will be calculated for each performance period. The calculated change in percentage, as compared to the baseline, will be used to determine water-use-improvement performance. The change in percentage will be calculated by dividing the difference between the baseline total and the performance period total by the baseline total, multiplied by 100. The resulting percentage must be a positive value to indicate that water use has improved (i.e., that a reduction has occurred).

The nonpotable freshwater reduction goal must be achieved at the DOE-complex wide level. As necessary, corrective-action measures will be recommended and implemented to address deficiencies toward achieving the overall LM water-reduction goal for these use categories.

Attachment 5

LM *Fleet Management Plan*

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LMS/POL/S11157-4.0

Fleet Management Plan

U.S. DEPARTMENT OF ENERGY | Legacy Management

Fleet Management Plan
Document History

Version No./ Revision No.	Revised	Description of Change
4.0	November 2017	• Updated the content of the document to address processes and regulatory changes. • Incorporated IP-07-07. • Performed a comprehensive review.
3.0	October 2016	• Updated the content of the document to address changes in fleet. • Performed a comprehensive review.
2.0	December 2015	• Verbiage changes made to respond to new Executive Order and its mandates. • Performed a comprehensive review.
1.0	December 2014	• Document title was changed from *Fleet Management Site Sustainability Plan* to *Fleet Management Plan*. • Editorial changes were made throughout the document. • Section 1.1: Removed text, simplified text, and added reference to the *Site Management Guide* (Blue Book). • Table 1: Removed sites supported since that was not pertinent to the management of the LM fleet. • Under Notes, removed the specifics that are found in the table and changed home garage to garaging location for uniformity throughout the document. • Section 2.1: Made reference to EPAct 2005 Section 701 waiver process for guidance in choosing replacement vehicles. • Section 2.2: Added and removed text for clarity. • Section 3.1: Added and removed text for clarity and inserted a reference to EPAct 2005 701 waiver process. • Section 4.1: Removed and added text for clarity, especially in reference to training, which is covered in Section 4.3. • Section 4.3: Added the training nomenclature of HS161, GSA101, and EC100 to better identify the trainings. Added definitional text to describe some training. • Performed a comprehensive review as required by contractor-controlled document procedure.
0.0	November 2013	Initial issue.

Fleet Management Plan
Document History (continued)

Approved:

2017.11.15
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Contents

Table

Abbreviations

AFV	alternative fuel vehicle
APR	accountable property representative
CFR	*Code of Federal Regulations*
DOE	U.S. Department of Energy
DRUM	Defense Related Uranium Mines
E-85	85% ethanol fuel blend
EMS	Environmental Management System
EO	Executive Order
EPAct	Energy Policy Act
GSA	U.S. General Services Administration
LM	Office of Legacy Management
LMS	Legacy Management Support

1.0 Fleet Management

1.1 Introduction and Overview

This *Fleet Management Plan*, in conjunction with the *Environmental Management System Sustainability Teams Manual* (LMS/POL/S11374) and the *LM Site Sustainability Plan* (LMS/S07725), outlines the U.S. Department of Energy (DOE) Office of Legacy Management (LM) fleet management strategies, and it details LM's planned activities for meeting sustainability goals defined in federal law, including Executive Order (EOs) such as EO 13693, *Planning for Federal Sustainability in the Next Decade*; presidential memoranda; DOE guidance documents such as the *2016 Strategic Sustainability Performance Plan, Report to The White House Council on Environmental Quality and Office of Management and Budget* (DOE 2016), and DOE Order 436.1, *Departmental Sustainability*. These regulatory documents help LM perform appropriate fleet management that is consistent with DOE and federal government laws and policies.

LM uses an Environmental Management System (EMS) as the framework to achieve regulatory compliance to meet sustainability goals. LM's EMS is a joint program between LM and its Legacy Management Support (LMS) contractor. LM's EMS comprehensively incorporates life-cycle environmental considerations into all aspects of the LM mission. The EMS Vehicle and Fuel Use Team is one of nine sustainability teams established to develop and implement processes related to achieving sustainability goals; it is responsible for fleet-related goals.

Note

In this document, a reference to LM represents both LM and the LMS contractor (for data, personnel, etc.) unless specifically noted otherwise.

1.2 The U.S. Department of Energy Office of Legacy Management Fleet Dynamic

The LM and LMS contractor's Fleet Management Team is located at the LM office in Grand Junction, Colorado. From this location, the team supports mission tasks and manages fleet vehicles at eight occupied locations, each of which has an accountable property representative (APR) whose role is to manage the day-to-day activities and logistics of onsite fleet activities. These vehicles are used to accomplish the ever-expanding LM mission of long-term surveillance and maintenance of current legacy sites (identified in Appendix A of LM's *Site Management Guide* [DOE 2017]), future legacy sites (identified in Appendix B of the *Site Management Guide*), and other LM-mission activities (e.g., maintenance of calibration models and the Defense Related Uranium Mines [DRUM] program).

LM's fleet consists predominantly of vehicles leased from the U.S. General Services Administration (GSA), with one LM-owned vehicle at the Fernald Preserve, Ohio, Site that is used to transport and operate bed–mounted Geoprobe drilling equipment. LM's current fleet locations and number of vehicles at each location are outlined in Table 1.

Table 1. LM Fleet Locations and Number of Vehicles

Fleet Garaging Location	Number of Vehicles[d]
Fernald Preserve, Ohio, Site	10[a] 1 owned[a,d]
LM office at Grand Junction, Colorado	14[b] 9[a, e]
Monticello, Utah, Disposal and Processing Sites	1[c]
LM Business Center in Morgantown, West Virginia	1[c]
LM office at Pinellas County, Florida	1[c]
Tuba City, Arizona, Disposal Site	1[c]
Weldon Spring, Missouri, Site	1[c]
LM office at Westminster, Colorado	9[a, e] 1[b]
Total	49[e]

Notes:

[a] The LM/LMS fleet manager assigns vehicles to various teams in support of the LM mission. A team consists of two or more people devoted to individual tasks or common multiple tasks in support of a unified project or goal, and their assigned vehicle is called a subpooled vehicle.

[b] Due to the large number of sites supported by the LM office at Grand Junction, it is necessary to pool vehicles to allow for appropriate support using the minimum number of vehicles possible.

[c] At all occupied sites with only one assigned vehicle, the vehicle is needed to support the mission tasks of that site on a daily basis. These tasks cannot be effectively accomplished by using a pooled vehicle from the LM office at Grand Junction because of the distance to the garaging location, which is where the vehicle primarily resides when not in use.

[d] All vehicle counts are for leased vehicles only, unless specifically stated otherwise.

[e] This count is accurate as of September 30, 2017.

2.0 Vehicle Acquisition

2.1 Choosing a Vehicle

Vehicle replacements are chosen based on GSA guidelines on a like-for-like basis or as mission changes dictate. LM plans for 75% of all new and replacement light-duty acquisitions to be alternative fuel vehicles (AFVs) in accordance with EO 13693. When LM leases new GSA vehicles, a list of minimum mission requirements for the requested vehicle is provided to GSA. GSA obtains a vehicle that matches LM's minimum requirements; if unable to accommodate such a request, GSA will recommend commercial leasing as an option. LM policy requires inspections of each vehicle using an internal inspection form and pictures to document damage and the vehicle's condition upon receipt and termination. ("Receipt" is when LM takes physical possession of the vehicle asset from the transport driver, and "termination" is when LM surrenders physical possession of the vehicle asset to the transport driver.) The inspection form is signed by the person inspecting the vehicle and by the transport driver and provided to GSA or the commercial vendor. Pictures should be used to document the vehicle's condition, and the documentation package should be provided to GSA or the commercial leasing facility and maintained for the duration of the leased vehicle's life in the LM fleet.

A number of tools are at the fleet team's disposal to address vehicle resource needs in a cost-effective manner. Those tools are further described below:

- When a rental vehicle or equipment (i.e., construction or other nonfleet vehicle) is needed for fewer than 60 days and when it is not traveling more than 60 miles from the garaging location, LM can use the GSA Short Term Rentals program.
- When GSA has older returned vehicles available, LM can request these vehicles for temporary seasonal use. LM is only allowed to have these seasonal-use vehicles for 120 days, at which point LM would have to either return the vehicle or request another seasonal-use vehicle if one is available. If the 120-day time span crosses September 30 of that year, the 120-day clock starts over from September 30.
- In accordance with LM policy, LM may hold over any scheduled replacement vehicle for no more than one additional year due to the added cost of maintaining aging vehicles.
- As a last resort and when leased vehicles are unavailable through GSA, the policy is to contact a local commercial rental facility to acquire a rental vehicle to offset project needs until another leased vehicle becomes available. It is imperative that inspections are conducted and documentation, including pictures of the vehicle condition, is maintained for the life of the lease.

As stewards of government appropriations and in accordance with the Section 701 waiver process from the Energy Policy Act (EPAct) of 2005 (PL 109-58), LM will make every effort to avoid the excessive costs of purchasing AFVs when there is no alternate fueling infrastructure within a reasonable distance of the garaging location. LM has a policy to acquire low greenhouse gas–emitting vehicles primarily when they are available; if they are unavailable, LM acquires E-85 (85% ethanol fuel blend)-capable AFVs. Low greenhouse gas–emitting vehicles operated with conventional gasoline fuel are considered AFVs.

2.2 Approvals for Leased Vehicles

Approval by the LM fleet manager, the LM fleet manager's senior approving manager, and the DOE Headquarters industrial fleet manager is required when leasing vehicles through GSA. When adding specialized accessory equipment to the leased vehicles, approval is required of the LM fleet manager and the GSA fleet service representative.

2.3 Accessory Equipment

Accessory equipment may be added to GSA-leased vehicles when mission needs and safety dictate and when approved by GSA. Whether these accessories will be requested as GSA- or DOE-owned must be determined. The determination is made in the best interest of LM.

Historically, accessory equipment that cannot be reused at the end of the leased vehicle life cycle would be excessed through the Personal Property team through a 72-day process. Accessories that can be reused would be reused on other vehicles if a project need exists. Additionally, if LM determines that it is in the best interest to have GSA own the equipment, LM could request the accessories before delivery of the vehicle, and the cost of those accessories would be added as a fixed cost to the LM lease rate. If GSA owned more than $10,000 of accessories on a single vehicle, it would begin to add an additional mileage rate on top of the vehicle's existing mileage

rate and in addition to the added fixed cost. If LM requests accessories after delivery, LM can determine whether it wants GSA to own the equipment, thus providing an added lease rate and mileage rate depending on the total amount of all accessories, or whether it wants DOE to own the accessories. When GSA figures out the added fixed costs for accessories, it looks at the replacement months for the lease and amortizes that cost over the maximum replacement years. In the case of light-duty vehicles, it is 7 years or 65,000 miles, so GSA would amortize the cost of the accessories over 7 years. Additionally, accessories typically increase the value of the vehicle for resale for GSA, reducing billbacks to LM for vehicles that did not meet the fair market price. LM has the option to return any and all accessories to GSA. Any accessories that cannot be sold will be removed, and the cost of the removal will be billed back to LM.

To determine whether GSA or DOE will own the accessories, LM will consider the anticipated level of effort for disposal, the ability to reuse the accessory on another vehicle, and the nature of the vehicle use. All criteria must be weighed against the best interest of LM. For instance, if LM knows it will be required to dispose of the asset at the end of the life cycle (often due to LM's inability to reuse the accessory or because the project needing the accessory is a temporary project), then LM would request the equipment be GSA-owned (e.g., camper toppers, suspension components, and engine modifications due to specific requirements of year, make, and model). However, if an accessory can be reused on other vehicles and is not reliant on a specific year, make, and model, LM would request that LM own the equipment (e.g., winches and backup cameras). Finally, if a vehicle routinely accumulates a lot of miles and is replaced before the standard 7 years for light-duty vehicles, LM can realize a cost savings through using GSA-owned accessories as LM will not pay full price for the accessories. For low-mileage vehicles whose accessories are owned by GSA, LM will end up paying the full price of the accessories over the life cycle of the lease. The cost savings is realized in the level of effort required for the Personal Property team to excess the equipment.

Accessories that are requested and purchased using the vehicle-specific Wright Express fuel card will be tracked through GSA and reported to the GSA Fleet Drive-Thru system. Any cumulative accessories on one request over $1,000 will be capitalized to the vehicle, and an added lease rate will be incurred. This equipment will be considered GSA-owned equipment. Anything less than $1,000 and desired to be LM-owned equipment will be billed back to LM. For LM to own accessory equipment with values greater than $1,000 per request, the request will have to go through the contractor procurement group for the equipment to be purchased using a purchase card, check request, or purchase requisition. These transactions are not captured by GSA and thus will not be reported through GSA Fleet Drive-Thru tools. Consequently, these transactions will need to be captured and reported as direct costs using the Federal Automotive Statistical Tool.

3.0 Fuel Infrastructure

3.1 Impact on Acquisition Strategy

Fueling infrastructure does not currently impact the LM vehicle acquisition strategy. Vehicles that are compatible with E-85 flex fuel or are low greenhouse gas–emitters are obtained whenever possible for all light-duty use in accordance with EO 13693. However, LM will maintain compliance with the EPAct 2005 Section 701 waiver process by identifying and

preventing unnecessary costs for AFVs when there is no alternative fueling infrastructure within a reasonable distance of the vehicle's garaging location, which is often the case at LM's remote sites, or when the mission does not allow it. Other alternative fuels—such as biodiesel, liquid propane gas, compressed natural gas, electric, etc. are not feasible due to a lack of infrastructure near sites that LM manages.

4.0 Vehicle Use and Policies

4.1 Education

LM requires that all potential GSA vehicle drivers take an approved defensive driver training course before driving a GSA vehicle. In addition, all contractors are required to take the EC100, Environmental Management System (EMS) General Awareness, and GSA101, LM Vehicle Use, training courses. The EMS training discusses ways that operators of GSA-leased vehicles or DOE-owned vehicles can help reduce petroleum consumption and increase the use of alternative fuels to help LM meet its sustainability goals. Additionally, this training spells out the sustainability goals for petroleum reduction that LM strives to achieve on an ongoing basis. The GSA101 course defines the prerequisites for authorization to drive a GSA vehicle; the basic safety requirements associated with driving a GSA vehicle, rental vehicle, or other vehicle while on contract-related business; the accepted procedures for using GSA vehicles; the actions required in the event of an accident; the requirements for fuel purchases; basic vehicle maintenance requirements; and the basic EMS considerations associated with GSA vehicle selection, use, and fueling. Other fleet-related training may be required by the LMS training department before an employee can drive a GSA, DOE-owned, or commercial rental vehicle.

4.2 Check Out Process

The Grand Junction office procedures for pooled fleet vehicle use require personnel to schedule a GSA vehicle with the dispatcher 2 days or more in advance when the situation allows. All fleet vehicles are allocated on a first-come, first-served basis with the exception of mission-critical needs that supersede all other requests. Additionally, the LM office in Westminster, Colorado, has one pooled vehicles for use. For pooled vehicle reservations at the LM office in Westminster, personnel must contact the onsite fleet APR.

Locations that have only one vehicle—such as the Tuba City, Arizona, Disposal Site; the Monticello, Utah, Disposal and Processing Sites; the Weldon Spring, Missouri, Site; the LM office at Pinellas County, Florida; and the LM Business Center in Morgantown, West Virginia—fall under the responsibility of the respective LM site managers, who can delegate decisions on vehicle assignment and appropriate use of government-furnished vehicles to contractor management. Contractor managers can implement additional policies and allocate vehicles as they deem fit. Personnel at the LM office in Westminster and the Fernald Preserve site check out vehicles as their project teams and the LM mission require.

LM encourages its entire staff, including contractor staff, to carpool whenever possible. Opportunities for carpooling include consolidating trips for site visits, inspections, and groundwater sampling.

All personnel driving a GSA vehicle are required, at a minimum, to provide a current driver's license, sign a *Motor Vehicle Operation Authorization Form* (LMS 1112) to submit for a driver's background check, take the required training, and perform a pretrip inspection of the vehicle every time they operate it. This inspection helps to visually identify any possible safety, mechanical, or property concerns. Additionally, the pretrip inspection helps the driver become familiar with all of the operational functions of the vehicle (e.g., mirrors, tilt steering, climate controls) before departing.

4.3 Pooled, Individual Assigned, and Subpooled Vehicle Fleets

LM's policy on vehicle assignments is to pool fleet vehicles. This means that vehicles are not permanently assigned to teams or individuals but are available on an as-needed basis to authorized drivers performing LM work. The fleet at the LM office in Grand Junction is an example of a pooled fleet. At this location, drivers are required to reserve their vehicles in advance, load equipment into the vehicles before departing, and remove all equipment and trash when returning the vehicle. Fully pooled fleets provide the greatest utilization of vehicles. No vehicles are assigned to individuals across LM. As of the end of fiscal year 2017, the LM office in Westminster has one pooled vehicle for use by any authorized driver and nine subpooled vehicles.

A subpooled vehicle is assigned to a team or teams that must pool the vehicle among themselves, but when it is not in use by the assigned team(s), the vehicle can be made available to the rest of the staff. For day-to-day pooling of subpooled vehicles that are not in use by the assigned team(s), the site leads can coordinate vehicle resource needs at the site level with the LM or LMS fleet manager. It is the intent that this be accomplished through notification to the site's fleet APR with oversight from the site lead or site manager and LM or LMS fleet manager. Assigning vehicles to teams of two or more has proved to be an effective and efficient means to accomplish the LM mission with the least effort to the teams when different tasks for a common project are being routinely performed. Only the LM or LMS fleet managers can subpool a vehicle to a team on a permanent basis.

Occasionally, subpooled vehicles will be switched permanently to fully pooled vehicles when inefficiencies occur or when the mission requires. This policy is driven by mission needs determined by LM. At no time is the convenience or comfort of the driver used to determine the need to change pooling scenarios or assignments.

4.4 Anti-Idling Policy

LM has an anti-idling policy that encourages personnel to be energy conscious and turn off the engine to avoid longer-than-normal and unnecessary idle times. This policy is to be followed as long as it does not hinder the accomplishment of LM's mission or affect the occupants' safety and health. Vehicles should run at an idle when it is the power source for the equipment and drill assemblies or when employee health and safety are a concern, such as when the cab of a vehicle must be kept warm while conducting fieldwork in extremely cold weather or when the cab of a vehicle must be kept cool while conducting work in hot weather.

4.5 Personal and Home-to-Work Use

For DOE employees, government motor vehicles may be used only for official use and for the incidental purposes described in Title 41 *Code of Federal Regulations* Section 102-5 (41 CFR 102-5), 41 CFR 109, and this section. Official use does not include the use of vehicles between home and a place of work except for the circumstances addressed in this section. Therefore, the director of the DOE Office of Asset Management and the heads of the field organizations should establish controls to ensure that the use of motor vehicles for home-to-work transportation is in accordance with the provisions of 41 CFR 102-5 and 41 CFR 109. A government motor vehicle may be issued to a DOE employee at the close of the preceding workday when the employee is authorized to travel by government motor vehicle and any of the following applies:

a. There is a significant savings in time by permitting a departure from home.

b. The employee is scheduled to depart for temporary duty, in the interest of the government, before the beginning of regular work hours.

c. The motor vehicle may be returned the next regular workday when an employee is scheduled to return from an LM-related assignment after regular work hours. This type of use of a government motor vehicle is not regarded as prohibited by Title 31 *United States Code* Section 1344 (31 USC 1344) (25 Comp. Gen. 844).

Contractor employees can use government motor vehicles for home-to-work transportation when both of the following conditions are met:

a. A home-to-work determination addressing one of the authorizing circumstances listed in 41 CFR 102-5, "Home-To-Work Transportation," and 41 CFR 109-6, "Miscellaneous Regulations," is prepared in writing.

b. The secretary of energy authorizes the home-to-work use as required by 41 CFR 102-34, Subpart D, "Official Use of Government Motor Vehicles."

The comfort, convenience, or managerial position of contractor employees is not considered a justification for authorizing home-to-work use. Contractors should maintain logs and other records on the use of a government motor vehicle for transportation between an employee's residence and place of employment.

5.0 Additional Policies and Activities

Additional fuel reduction, alternative fuel use, and vehicle reduction activities and policies are driven by changes in DOE goals and strategies. The LM Fleet Management team uses a continual evaluation methodology (e.g., telematics, asset management system, and GSA tools) to achieve the LM mission, identify fueling infrastructure for alternative fuels in the areas where LM operates, analyze the cost of current vehicle usage, identify more feasible means for improving vehicle usage, and right-size the number of unnecessary or oversized fleet vehicles. This methodology provides good stewardship of government assets while maintaining the highest level of public safety and health throughout LM.

LM can reduce petroleum usage and increase alternative fuel usage by encouraging carpooling to conferences or onsite trips, educating drivers about the proper use of E-85 fuel and how to locate fueling stations, and encouraging pretrip inspections of the vehicles to identify unsafe conditions or defects that may negatively impact the goals of reducing conventional fuel use and increasing alternative fuel use. The LM Fleet Management team regularly monitors DOE's Office of Energy Efficiency and Renewable Energy website for updated information on the alternative fueling infrastructure available at all LM sites. Additionally, LM could realize increased savings by encouraging the use of electric golf carts, utility terrain vehicles, or other nonfleet electric vehicles when environmental factors and mission tasks allow.

LM has encouraged the reduction of unnecessary travel by offering alternative solutions such as videoconferencing and virtual presence technology for meetings when possible. Although LM has not eliminated the need to travel for all meetings and trainings, the staff has reduced the amount of travel by using communication technology when it is available and feasible.

Alternative fuel use is required by regulations for federal fleets that contain vehicles capable of operating with alternative fuels. LM's policy is to fuel with alternative fuels whenever possible and without any unreasonable effort. This effort positively contributes toward overall agency sustainability goal accomplishment. As an example, if the travel time to the alternative fueling station during rush hour periods is 1 hour but in non-rush hour periods is only 15 minutes, then drivers should make the determination and effort to fuel with E-85 during non-rush hour times. Drivers should make the determination based on feasibility, safety, and cost impact to the project.

6.0 References

41 CFR 102-34.220, U.S. Department of Energy, "Federal Management Regulation," *Code of Federal Regulations*.

41 CFR 109-38.3, U.S. Department of Energy, "Official Use of Government Motor Vehicles," *Code of Federal Regulations*.

DOE Order 436.1, *Departmental Sustainability*, U.S. Department of Energy, May 2, 2011.

DOE (U.S. Department of Energy), 2016. *2016 Strategic Sustainability Performance Plan, Report to The White House Council on Environmental Quality and Office of Management and Budget,* September.

DOE (U.S. Department of Energy), 2017. *LM Site Sustainability Plan,* LMS S07225, Office of Legacy Management, December.

Environmental Management System Sustainability Teams Manual, LMS/POL/S11374, continually updated, prepared by Navarro Research and Engineering, Inc., for the U.S. Department of Energy Office of Legacy Management.

EO (Executive Order) 13693, *Planning for Federal Sustainability in the Next Decade*, March 19, 2015.

PL 109-58, Energy Policy Act (EPAct) of 2005, Section 701, Public Law.

Site Management Guide, U.S. Department of Energy Office of Legacy Management, Update 19, March 2017.

Attachment 6

LM 2017 Commuter Survey

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2017 LM/LMS Commuter Survey

1. Please select your main work location:

- ◯ Fernald/Mound, Ohio
- ◯ Grand Junction, Colorado
- ◯ Monticello, Utah
- ◯ Morgantown, West Virginia
- ◯ Pinellas, Florida
- ◯ Tuba City, Arizona
- ◯ Weldon Spring, Missouri
- ◯ Westminster, Colorado

No logic applied, all responses proceed to question number 2

Other (please specify)

2. What is your employment status?

- ◯ Federal government employee
- ◯ Federal government contractor (e.g., Navarro, Leidos, Weston, LMATA employee)
- ◯ Other (please specify)

No logic applied, all responses proceed to question number 3

3. Which of the following best describes your work schedule?

- ◯ 9/80 work week (9-hour work days and 1 day off each pay period)
- ◯ 4/10 work week (4 10-hour work days and 1 day off each week)
- ◯ Working part-time
- ◯ Working 5 8-hour days a week

-If "Working part-time" is selected, survey proceeds to question 4
-If any other answers are selected, the survey proceed to question number 5

Other (please specify)

4. Please select the number of days a week you typically work.

- ○ 5
- ○ 4
- ○ 3
- ○ 2
- ○ 1
- ○ Other (please specify)

-Only seen if "Working part-time" is selected in question 3
-No logic applied, all responses proceed to question 5

5. Do you participate in teleworking?

- ○ Yes, I telework full-time
- ○ Yes, I regularly telework once a week
- ○ Yes, I regularly telework once a pay period
- ○ Only in inclement weather
- ○ No, I do not participate in teleworking
- ○ Other (please specify)

-If "Yes, I telework full-time" is selected, survey proceeds to question 19
-If "Yes, I telework only in inclement weather" is selected, survey proceeds to question 6
-If any other response is selected, survey proceeds to question 7

6. How many days in the past year have you teleworked due to inclement weather?

-Only seen if "Only in inclement weather" is selected in question 5
-No logic applied, all responses proceed to question 7

7. Please select your primary form of transport TO work.

- ○ Car (drove alone)
- ○ Truck/Van/SUV
- ○ Motorcycle
- ○ Carpool/Vanpool
- ○ Bicycle
- ○ Walk
- ○ Transit Bus
- ○ Transit Rail (subway, light rail)

-If "Bicycle" or "Walk" is selected, survey proceeds to question 9
-If any other response is selected, survey proceeds to question 8

8. Please select the appropriate fuel type for your primary transport TO work.

- ○ Gas
- ○ Hybrid
- ○ Diesel
- ○ Electric

No logic applied, all responses proceed to question number 9

9. How many miles do you travel TO work using your primary form of transport?

No logic applied, all responses proceed to question number 10

10. Do you use any other form of transport to commute TO work?

- ○ Yes, **in place of** the primary form (e.g., occasionally biking instead of driving)
- ○ Yes, **in addition to** the primary form (e.g., driving a car to the bus stop)
- ○ No

-If "Yes, in place of the primary form..." is selected, survey proceeds to question 11
-If "Yes, in addition to the primary form..." is selected, survey proceeds to question 12
-If "No" is selected, survey proceeds to question 15

11. How many times in the past year have you used this secondary form of transport in place of your primary form?

-Only seen if "Yes, in place of the primary form..." is selected in question 10
-No logic applied, all responses proceed to question number 13.

12. How many miles do you travel TO work using your secondary form of transport?

-Only seen if "Yes, in addition of the primary form..." is selected in question 10
-No logic applied, all responses proceed to question number 13.

13. Please select your secondary form of transport TO work.

- Car (drove alone)
- Truck/Van/SUV
- Motorcycle
- Carpool/Vanpool
- Bicycle
- Walk
- Transit Bus
- Transit Rail (subway, light rail)

-Only seen if "Yes, in addition of the primary form..." or "Yes, in place of the primary form..." is selected in question 10
-If "Bicycle" or "Walk" is selected, survey proceeds to question 15
-If any other response is selected, survey proceeds to question 14

14. Please select the appropriate fuel type for your secondary transport TO work.

- Gas
- Hybrid
- Diesel
- Electric

No logic applied, all responses proceed to question number 15

15. Do you commute FROM work in the same manner?

- Yes
- No

-If "Yes" is selected, survey proceeds to question 19
-If "No" is selected, survey proceeds to question 16

16. Please select your primary form of transport FROM work.

- Car (drove alone)
- Truck/Van/SUV
- Motorcycle
- Carpool/Vanpool
- Bicycle
- Walk
- Transit Bus
- Transit Rail (subway, light rail)

-Only seen if "No" is selected in question 15
-If "Bicycle" or "Walk" is selected, survey proceeds to question 18
-If any other response is selected, survey proceeds to question 17

17. Please select the appropriate fuel type for your primary form of transport FROM work.

- Gas
- Hybrid
- Diesel
- Electric

No logic applied, all responses proceed to question number 18

18. How many miles do you travel FROM work using your primary form of transport?

No logic applied, all responses proceed to question number 19

19. Please enter any other comments as they relate to commuting.

End of survey