LMS/S07725

U.S. DEPARTMENT OF ENERGY | Legacy Management

2017 SITE SUSTAINABILITY PLAN

U.S. Department of Energy
Office of Legacy Management

December 2016

This document was printed on paper manufactured with post-consumer waste as part of LM's commitment to environmental responsibility.

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Clockwise from top left:

Wildlife at the Rocky Flats Site, Colorado.

The log cabin at the Grand Junction, Colorado, office is included on the National Register of Historic Places.

Weldon Spring, Missouri, Site.

Long-term surveillance and maintenance activities at the Amchitka, Alaska, Site.

LMS/S07225

Site Sustainability Plan
U.S. Department of Energy
Office of Legacy Management

December 2016

Thomas C. Pauling 12/9/2016

Thomas C. Pauling, Acting Director, Office of Legacy Management Date

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Abbreviations

AFV	alternative fuel vehicle
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
AS&T	Applied Studies and Technology
Btu	British thermal units
CAS	Condition Assessment Survey
CEDR	Consolidated Energy Data Report
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CO_2	carbon dioxide
D&D	deactivation and decommissioning
DOE	U.S. Department of Energy
DRRP	Dolores River Restoration Partnership
E85	85% ethanol alternative fuel blend
ECM	energy conservation measure
EISA	Energy Independence and Security Act
EMS	Environmental Management System
EPM	Environmental Program Management
EO	Executive Order
EPA	U.S. Environmental Agency
EPAct 2005	Energy Policy Act of 2005
EPEAT	Electronic Product Environmental Assessment Tool
ESPC	Energy Savings Performance Contract
ET	evapotranspiration
EI	energy intensity
FAST	Federal Automotive Statistical Tool
FDCCI	Federal Data Center Consolidation Initiative
FEMP	Federal Energy Management Program
FIMS	Facilities Information Management System
FY	fiscal year
gal	gallon, gallons
GHG	greenhouse gas
GP	guiding principles
GSA	U.S. General Services Administration
GSF	gross square feet; gross square footage
HPSB	high-performance and sustainable building
HRPP	high-risk personal property
HVAC	heating, ventilation, and air-conditioning
IAEA	International Atomic Energy Agency
ILA	industrial, landscaping, and agricultural
IT	Information Technology
ITSE	Interim Treatment System Evaluation
JAMIS	Job Cost Accounting Management Information System
kW	kilowatts
kWh	kilowatt-hours
lbs	pounds
LM	Office of Legacy Management
LMBC	Legacy Management Business Center
LMS	Legacy Management Support
NECPA	National Energy Conservation Policy Act
OEM	original equipment manufacturers
PAM	Performance Assurance Measures

PL	Public Law
PREP	Preliminary Real Estate Plan
PUE	power utilization effectiveness
RE	renewable energy
REC	renewable energy certificate
SF_6	sulfur hexafluoride
SFTool	Sustainable Facility Tool
SOARS	System Operation and Analysis at Remote Sites
SPO	Sustainability Performance Office
SSP	Site Sustainability Plan
SSPP	Strategic Sustainability Performance Plan
T&D	transmission and distribution
TAA	Trade Agreements Act
UAS	Unmanned Aerial System
USC	United States Code
UMTRCA	Uranium Mill Tailings Radiation Control Act
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USPS	United States Postal Service
WI	water intensity
ZVI	zero-valent iron

I. Executive Summary

a. 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 and maintains more than 62,000 acres at 91 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 models; administers the Defense-Related Uranium Mine Program to verify and validate the condition of abandoned uranium mines on U.S. Bureau of Land Management lands and 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 programmatic levels 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. These systems are fully integrated 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 A 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 and accounting for climate change in LM site management.

LM operates its EMS jointly with its Legacy Management Support (LMS) prime contractor, and both partners place a priority on sustainability while executing the LM mission and achieving the LM goals. In 2016, LM established a new sustainability team, the Ecology Enhancement team, to assist with these challenges.

Note 1

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

Note 2

Unless stated otherwise, all data are reported in fiscal years.

b. Planning Synopsis

This *Site Sustainability Plan* (SSP) outlines LM's sustainability and management strategies and details LM's progress in meeting sustainability goals defined in federal law, DOE orders and

Executive Orders (EO), and DOE departmental guidance documents (e.g., Strategic Sustainability Performance Plan [SSPP]).

LM's priorities are to sustainably manage LM's legacy sites, land, and assets. LM achieves these goals by conserving resources (consuming fewer resources, reusing and recycling resources, and promoting resource conservation); managing sites in compliance with applicable federal, tribal, state, and local requirements; implementing infrastructure improvements; and operating onsite renewable-energy-generating projects.

c. People and Processes

The EMS covers both environmental compliance and sustainability. The environmental compliance aspect helps LM use its finite resources wisely, to minimize waste and adverse environmental impacts, and to comply with the laws, regulations, DOE requirements, and other applicable requirements that protect the environment, public and worker health, and resources. This includes compliance with federal, state, local, and tribal requirements, agreements, and permits. 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 DOE operations. Implementing the EMS is integral to LM's mission and to achieving excellence in environmental stewardship. The LMS Environmental Compliance group is integrated into program/project implementation from planning through completion to help ensure activities are performed so that the safety of the public and protection of the environment are maintained.

The LM sustainability aspect, with its comprehensive approach to fulfilling sustainability goals, will advance the DOE sustainability mission with a diverse approach and a concentrated effort toward the goals of 2017 and beyond. To achieve the goals, LM will work with its EMS Core Team, sustainability teams, the LMS Environmental Compliance group, and the management and site leads. In addition, LM will enlist the technical expertise of its scientists and engineers to identify methods that enable LM to operate sustainably and in compliance. This fostering of sustainable operations will include continued emphasis on integrating sustainability practices into LM operations and behavior change. See Section 12 for additional information.

d. Successes and Challenges, Including Traditional Triple Bottom Line Activities

In 2016, LM received national recognition and a GreenGov Presidential Keeping It Clean Award for the Rocky Flats Site, Colorado, East Trenches Plume Treatment System Reconfiguration Project and a DOE Sustainability Award in the Waste Reduction and Pollution Prevention category for the project "Sustainability Innovations Improve Groundwater Treatment While Reducing Waste and Pollution" at the Rocky Flats site.

In 2016, LM passed its internal EMS audit. LM declared conformance with the International Organization for Standardization 14001:2004 standard in June 2015 based on the results of a formal audit by a qualified external party. The external auditors gave LM a "Best in Class" rating for its strategic planning.

LM successfully achieved or exceeded 90% of the 2016 sustainability goals/targets. Exceptions to the goal attainment trends (fleet-related, solid waste-related, and greenhouse gas emissions–related) can be attributed to the uniqueness of LM's mission. However, LM is a small DOE organization, and so it contributes only a small percentage to DOE's overall sustainability goals.

By 2025, LM is projected to assume responsibility for 30 additional legacy sites and will adjust its EMS accordingly. As LM receives more sites and additional scope, it will employ more workers, occupy more office space, operate more vehicles, conduct more travel, consume more fuel, purchase more personal property, and generate more waste. In addition, buildings at future sites that will be transferred to LM might affect LM's ability to meet sustainability goals for energy intensity (EI) and water intensity (WI). Conditions at transfer could vary greatly from site to site, making it difficult to predict their impact on meeting the sustainability goals/targets. As LM receives more sites and increases scope, it will monitor the impacts to meeting sustainability goals/targets and related funding. LM might request additional EMS funding or a waiver, or both, for achieving certain sustainability goals.

As identified in the "Site Management Vision" section, LM has multiple fundamental goals. Underlying these fundamental 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 stakeholder communities regarding whether each LM site's activities comply 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 embracing a more holistic integration of climate adaptation; considering resilience in operations, policy, and workforce protocols; and further identifying climate risks for LM sites.

e. Funding

LM identifies the funds needed for meeting sustainability goals/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 or 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 EMS 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. See Section 11 for additional information.

f. Summary Table of Goals/Targets

LM's reporting consists of both the 2016 data entry in the DOE Sustainability Dashboard (referred to as Dashboard throughout remainder of document) and this 2017 SSP. See Table 1 for a performance summary of LM's sustainability efforts toward achieving Executive Order (EO) 13693 goals and DOE Strategic Sustainability Performance Plan (SSPP)[1] targets through 2016.

Note 3

Reported performance is based on the performance provided by the DOE Sustainability Dashboard Comprehensive Scorecard provided in Attachment H, dated December 1, 2016.

[1] DOE Strategic Sustainability Performance Plan, 2016

Table 1. Executive Summary Table of LM's Progress Toward Sustainability Goals and Targets

SSPP Goal #	DOE Goal	Performance Status Through FY 2016	Planned Actions and Contributions
GOAL 1: Greenhouse Gas Reduction			
1.1	50% Scope 1 & 2 GHG reduction by FY 2025 from a FY 2008 baseline (2016 target: 22%)	LM exceeded this target. LM reduced Scope 1 & 2 GHG 38.9% from 2008.	LM will strive to continue to reduce energy, water, and fleet use and to produce renewable energy (RE) or purchase renewable energy certificates (RECs) to meet the goal.
1.2	25% Scope 3 GHG reduction by FY 2025 from an FY 2008 baseline (2016 target: 7%)	LM exceeded this target. LM reduced Scope 3 GHG 28.4% from 2008.	LM will strive to maintain goal status and further reduce these emissions.
GOAL 2: Sustainable Buildings			
2.1	25% energy intensity (Btu per gross square foot) reduction in goal-subject buildings, achieving 2.5% reductions annually, by FY 2025 from a FY 2015 baseline.	LM did not meet this target. LM increased energy intensity by 4.6% from the 2015 baseline.	LM will continue to pursue projects that will further reduce its energy intensity.
2.2	EISA Section 432 energy and water evaluations	LM met this goal. LM conducted two water evaluations and two energy evaluations.	LM will conduct EISA water evaluations at the Grand Junction, Colorado, Disposal/Processing Site and the Old Mill at the Rifle, Colorado, Disposal/Processing Site. LM will conduct EISA energy evaluations at the Monticello, Utah, Disposal and Processing Sites; the Monument Valley, Arizona, Processing Site; and the Shiprock, New Mexico, Disposal Site.
2.3	Meter all individual buildings for electricity, natural gas, steam, and water, where cost-effective and appropriate.	LM met this goal.	LM will evaluate metering on any upcoming projects.
2.4	At least 17% (by building count) of existing buildings greater than 5,000 gross square feet (GSF) to be compliant with the *revised* Guiding Principles for HPSB by FY 2025, with progress to 100% thereafter.	LM exceeded this goal in 2016. 50% of LM's existing owned buildings meet the revised GPs.	LM will continue to monitor its existing owned building inventory for the GPs by conducting HPSB surveys relative to EO 13693.
2.5	Efforts to increase regional and local planning coordination and involvement.	LM met this goal.	LM will continue to pursue regional and location planning coordination and involvement and support site ecosystem enhancement activities.
2.6a	Net Zero Buildings: 1% of the site's existing buildings above 5,000 GSF intended to be energy, waste, or water net-zero buildings by FY 2025.	N/A. This is a new goal and there was no 2016 target to meet.	LM will assess and prioritize existing buildings >5000 GSF for potential to become net-zero buildings.

Table 1 (continued). Executive Summary Table of LM's Progress Toward Sustainability Goals and Targets

SSPP Goal #	DOE Goal	Performance Status Through FY 2016	Planned Actions and Contributions
2.6b	Net Zero Buildings: All new buildings (>5,000 GSF) entering the planning process designed to achieve energy net-zero beginning in FY 2020.	N/A. This is a new goal and there was no 2016 target to meet.	LM has no new buildings greater than >5000 GSF entering the planning process in FY 2020 or later.
GOAL 3: Clean and Renewable Energy			
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 2016-2017, working towards 25% by FY 2025.	LM exceeded the 2016 target. LM's clean energy use was 42%.	LM will research adding additional renewable and clean energy installations at LM sites. LM will ensure the current use of renewable energy is maintained 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.
3.2	"Renewable Electric Energy" requires that renewable electric energy account for not less than 10% of a total agency electric consumption in FY 16–17, working towards 30% of total agency electric consumption by FY 2025.	LM exceeded the 2016 target. LM's electrical energy use from renewable sources was 44.7%.	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.
GOAL 4: Water Use Efficiency and Management			
4.1	36% potable water intensity (Gal per GSF) reduction by FY 2025 from a FY 2007 baseline (2016 target: 18%)	LM exceeded the 2016 target. LM reduced potable water intensity by 94.3% in 2016.	LM will ensure current practices to reduce potable water intensity are maintained and will work toward reducing potable water intensity.
4.2	30% water consumption (Gal) reduction of industrial, landscaping, and agricultural (ILA) water by FY 2025 from a FY 2010 baseline (2016 target: 12%)	LM exceeded the 2016 target. LM reduced ILA water use by 98.9% in 2016.	LM will ensure current practices to reduce ILA water use are maintained and will work toward reducing ILA.
GOAL 5: Fleet Management			
5.1	30% reduction in fleet-wide per-mile greenhouse gas emissions reduction by FY 2025 from a FY 2014 baseline (2016 target: 3%; 2017 target: 4%)	LM has met the 2016 target. LM had a reported emissions level of 610 (gCO2e/Mile) for a total reduction of 3% based on the 2014 baseline.	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.
5.2	20% reduction in annual petroleum consumption by FY 2015 relative to a FY 2005 baseline; maintain 20% reduction thereafter (2016 target: 20%)	LM did not meet this 2016 target. LM decreased petroleum consumption by 12.8%.	LM will continue to encourage sites to fuel any E85-capable vehicle in our fleet with E85 when it is available. Additionally, LM will encourage trip consolidation and video teleconferencing to help reduce conventional fuel use.
5.3	10% increase in annual alternative fuel consumption by FY 2015 relative to a FY 2005 baseline; maintain 10% increase thereafter (2016 target: 110%)	LM exceeded the 2016 target with a 185,739% increase.	LM will continue to provide vehicles with E85 station maps and instructions indicating that LM should make every attempt to fuel up with E85 when it is available.

Table 1 (continued). Executive Summary Table of LM's Progress Toward Sustainability Goals and Targets

SSPP Goal #	DOE Goal	Performance Status Through FY 2016	Planned Actions and Contributions
5.4	Ensure 75% of light duty vehicle acquisitions meet consist of alternative fuel vehicles (AFVs). (2016 target: 75%)	LM did not meet the 2016 target with 66% of acquisitions being alternative fuel capable.	LM will evaluate AFVs for all light-duty vehicle acquisitions as long as it does not negatively impact the mission.
5.5	Ensure 20% of passenger vehicle acquisitions consist of zero emission or plug-in hybrid electric vehicles by 2020. (2015 target: N/A; 2020 target: 20%; 2025 target: 50%) From 2017 Guidance: 50% of passenger vehicle acquisitions consist of zero emission or plug-in hybrid electric vehicles by FY 2025 (2016 target: 4%)	LM met the 2016 target as LM doesn't have any passenger vehicles.	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.
GOAL 6: Sustainable Acquisition			
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	LM met this goal. LM included BioPreferred and biobased provisions in 100% of applicable contracts.	LM will continue to include appropriate language in all applicable contracts.
GOAL 7: Pollution Prevention and Waste Reduction			
7.1	Divert at least 50% of non-hazardous solid waste, excluding construction and demolition debris.	LM did not meet this goal. LM diverted 30.2% of nonhazardous solid waste, excluding construction and demolition debris.	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 in their projects and at their sites.
7.2	Divert at least 50% of construction and demolition materials and debris.	LM exceeded this goal. LM diverted 97.2% of construction and demolition materials and debris.	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 in their projects.
GOAL 8: Energy Performance Contracts			
8.1	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.	N/A. This is a new goal for 2017.	LM will continue to evaluate new projects for Energy Savings Performance Contract ENABLE initiatives during the planning process.
Goal 9: Electronics Stewardship			
9.1	Ensure 95% of eligible electronics acquisitions meet EPEAT standards.	LM exceeded this goal. 100% of eligible electronics acquisitions met EPEAT standards.	LM will continue to acquire electronic products that meet or exceed purchasing specifications and standards required for federal agencies.

Table 1 (continued). Executive Summary Table of LM's Progress Toward Sustainability Goals and Targets

SSPP Goal #	DOE Goal	Performance Status Through FY 2016	Planned Actions and Contributions
9.2	Ensure 100% of eligible PCs, laptops, and monitors have power management enabled.	LM met this goal. LM enabled and locked in place 100% of eligible systems with power management.	LM will continue to maintain 100% compliance on all eligible systems.
9.3	Ensure 100% of eligible computers and imaging equipment have automatic duplexing enabled.	LM met this goal. 100% of eligible computers and imaging equipment are configured with automatic duplexing by default.	LM will continue to maintain 100% compliance on all eligible systems.
9.4	Ensure 100% of used electronics are reused or recycled using environmentally sound disposition options each year.	LM met this goal. LM reused or recycled 100% of used electronics.	LM will continue to reuse or recycle used electronics in an environmentally sound manner that avoids disposal as waste.
9.5	Establish a PUE target in the range of 1.2–1.4 for new data centers and less than 1.5 for existing data centers.	LM exceeded this goal. LM maintained a PUE ratio of 1.32, exceeding the target of less than 1.5 for existing data centers.	LM will monitor and maintain the PUE ratio within the target range.
Goal 10: Climate Change Adaptation			
10.1	Update policies to ensure planning for, and addressing the impacts of, climate change.	LM met this goal. LM updated the *LM 2016–2025 Strategic Plan* to include climate change considerations under two different goal areas. LM and the LMS contractor revised their respective environmental policies to include climate change considerations.	LM will implement the policies.
10.2	Update emergency response procedures and protocols to account for projected climate change, including extreme weather events.	LM met this goal. The *Comprehensive Emergency Management System* was updated to include climate resilience considerations. An emergency response needs assessment was performed for all occupied and unoccupied sites.	LM will review recommended actions from the emergency response needs assessment and climate change research to make adjustments in the future for climate change adaptation and severe weather emergency response planning.
10.3	Ensure workforce protocols and policies reflect projected human health and safety impacts of climate change.	LM met this goal. Westminster, Colorado, office staff conducted an extreme-weather response drill and identified assembly areas that are now on maps posted throughout the office building.	LM will continue to develop and test procedures for extreme-weather events.
10.4	Ensure site/lab management demonstrates commitment to adaptation efforts through internal communications and policies.	LM met this goal. Internal communications included *Program Updates*, LM management presentations, a newsletter article, and an updated communication policy for the AS&T program.	LM will continue to review and update internal policies and share climate change adaptation and resilience information through existing internal communication mechanisms.

Table 1 (continued). Executive Summary Table of LM's Progress Toward Sustainability Goals and Targets

SSPP Goal #	DOE Goal	Performance Status Through FY 2016	Planned Actions and Contributions
10.5	Ensure that site/lab climate adaptation and resilience policies and programs reflect best available current climate change science, updated as necessary.	LM met this goal. The AS&T program has three technical task plans that include long-term projects dedicated to improving long-term cover and remedy performance.	LM will continue to incorporate climate change considerations into long-term disposal cell and remedy performance studies as well as educational collaborations.
10.6	Complete Dashboard climate change resiliency survey	LM met this goal by completing the Dashboard climate resiliency survey.	LM will continue to work toward task completion in the areas identified by the survey.

Abbreviations:

AFV	alternative fuel vehicle
AS&T	Applied Studies and Technology
EISA	Energy Independence and Security Act
EPEAT	Electronic Product Environmental Assessment Tool
E85	85% ethanol alternative fuel blend
GHG	greenhouse gas
GP	Guiding Principles
GSF	gross square feet
HPSB	high-performance and sustainable building
ILA	industrial, landscaping, and agricultural
N/A	not applicable
PUE	power utilization effectiveness
RE	renewable energy
REC	renewable energy certificate

II. Performance Review and Plan Narrative

1 Greenhouse Gas (GHG) Reduction and Comprehensive GHG Inventory

1.1 Scope 1 and 2 GHG Emissions Reduction

Reduce Scope 1 and 2 greenhouse gas (GHG) 50% by 2025 from a 2008 baseline (2016 target: 22%).

1.1.1 Performance Status

LM did not meet the 2016 target.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the following chart to locate U.S. Department of Energy (DOE) Office of Legacy Management (LM) quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Scope 1 and 2 GHG Emissions	Reports — Comprehensive Scorecard	Yes	No	No
Purchased Energy	Facilities — Energy	Yes	Yes	CTS LM Internal tracking documents
Operating Onsite Renewable Energy	Facilities — Renewables	No	No	LM Internal tracking documents
Purchased Renewable Energy	Facilities — Renewables	No	No	LM Internal tracking documents
Mixed Refrigerants	Vehicles and Equipment — Fugitives and Refrigerants	No	No	LM Internal tracking documents
Fugitive F-Gases	Vehicles and Equipment — Fugitives and Refrigerants	No	No	LM Internal tracking documents
Onsite Wastewater Treatment	Waste — Wastewater Treatment	No	No	No
Fleet Data	Vehicles and Equipment — Fleet Vehicles Fuel Fleet Vehicles Inventory Fleet Vehicles Mileage	No	No	FAST

Abbreviations:
FIMS = Facilities Information Management System
FAST = Federal Automotive Statistical Tool
CTS = Compliance Tracking System
F-Gases = Fluorinated Gases

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

LM exceeded the Scope 1 and 2 GHG emissions 2016 target this year. Purchased renewable energy certificates (RECs) are factored into the calculation for determining Scope 1 and 2 GHG emissions. LM is in the process of converting from locally purchased RECs to national RECs.

LM operations are nationwide and include sites managed under different regulatory frameworks, such as Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); DOE Defense Decontamination and Decommissioning (D&D) Program; Formerly Utilized Sites Remedial Action Program; Resource Conservation and Recovery Act; and Uranium Mill Tailings Radiation Control Act (UMTRCA). Overall, LM manages and maintains more than 62,000 acres at 91 sites in 28 states and Puerto Rico. LM is estimating management of 121 sites by 2025 and is evaluating Plowshare Program sites for consideration as legacy sites. Additionally, LM manages five radiometric calibration models; administers the Defense-Related Uranium Mine (DRUM) Program to verify and validate the condition of abandoned uranium mines on U.S. Bureau of Land Management (BLM) lands and the Uranium Leasing Program; retains records at the Legacy Management Business Center (LMBC) in Morgantown, West Virginia; and conducts office work at multiple locations.

As LM's number of sites grows and Program activities (DRUM, Uranium Leasing, and Plowshare Programs) expand, more personnel, travel, vehicles, and equipment will be required. This growth in activities will make it more challenging for LM to achieve this reduced GHG goal.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM produced 38.9% fewer Scope 1 and Scope 2 GHG emissions in 2016 than in 2008. Based on current annual GHG emissions, LM exceeded the 2016 target by 16.9%. Figure 1 shows progress against the target. As can be seen in Figure 1, there was a drop in the reduction in Scope 1 and 2 GHG emissions from 2015 to 2016.

LM successfully increased the use of alternative fuel with a 185,739% increase contributing to the reduction in Scope 1 and 2 GHG emissions.

One lesson learned is that the extended time to re-establish the REC contract with one utility service provider reduced the amount of RECs purchased. This, in addition to the extended power outage at Fernald Preserve, Ohio, Site, impacted the overall percent reduction in Scope 1 and 2 emissions. In the future, LM will purchase additional RECs anytime service is discontinued or power is out for extended time period to ensure goal is still met.

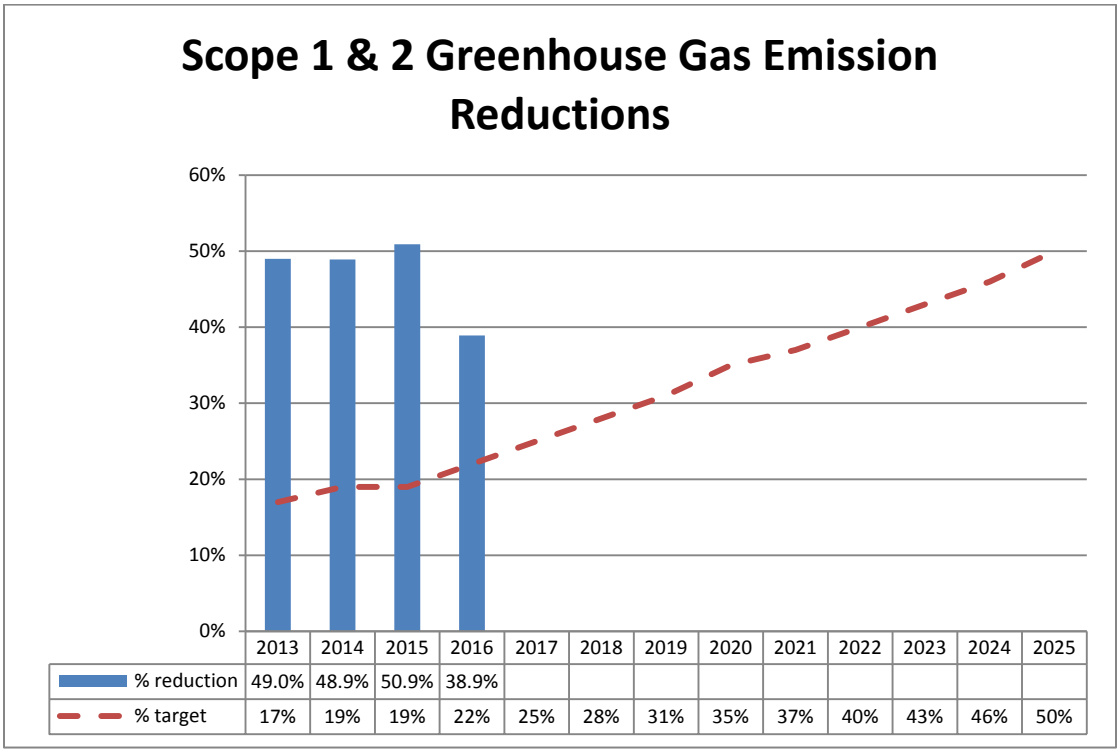


Figure 1. Scope 1 and 2 GHG Emission Reductions vs. Annual Targets

This past year, LM assessed and implemented improved space-planning methods in its Grand Junction office to accommodate 30 new staff members by redesigning and repurposing existing space.

LM uses the following best management practices to reduce Scope 1 and 2 GHG emissions:

- Collects data from 19 sites in 9 states and transmits the information to servers in the LM office at Grand Junction, Colorado, using the SOARS (System Operation and Analysis at Remote Sites) system. Tracking the active remediation systems is more efficient with SOARS. SOARS reduces staff travel to remote sites, thus conserving energy, protecting natural resources, and reducing GHG emissions.
- Practices ride-sharing, trip consolidation, video conferencing, and use of the right size and type of vehicle for task.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

1.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

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

- Construct a new building at the Weldon Spring, Missouri, Site, with occupancy taking place in 2019. To the extent practicable, this building will comply with the revised Guiding Principles (GPs), which include improvements in energy efficiency and respective GHG emissions.
- Strive to replace vehicles with higher-efficiency low-GHG-emitting vehicles for all light-duty replacements.
- Promote ride-sharing, trip consolidation, video conferencing, and using the right size and type of vehicle for the task.
- Continue to replace inefficient process equipment and install electricity-saving control systems, thus decreasing life-cycle costs, increasing systems' efficiencies, and reducing GHG emissions.
- Install sensing equipment that can be accessed remotely where possible, so that trips to remote sites are not necessary for collecting surveillance data.
- Undertake cost-effective, renewable energy (RE) projects.

As LM gains more sites and scope, LM will increase staff, travel, mission-related activities, resource use, and GHG emissions.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Reduce fleet emissions by acquiring hybrid and flex-fuel vehicles whenever possible.
- Where cost-effective, increase the use of SOARS to collect data from remote sites.
- Review and compare current LM RE produced onsite to purchased renewable energy certificates (RECs) and consider RE projects on LM sites when it is consistent with site end use agreements to replace purchased RECs.

- Evaluate the draft DOE Real Property Efficiency Plan for 2017–2021 to assess office space standards across LM sites, including evaluating those policies as they may apply to LM's current office space planning associated with its new Westminster, Colorado, Office.

e. Request technical assistance, if needed.

None.

f. Planned or needed training to increase awareness and encourage behavior change

Sustainability teams' work with the EMS training team to ensure EMS General Awareness Training is updated and provided within the 2-year refresher period to current employees and new employees. Sustainability teams work with the EMS communication team to produce the awareness articles that are published in the internal quarterly newsletter, *ECHOutlook*, so at least each team is represented once every 2 years. Related posters, contests, and activities sometimes accompany the articles to encourage sustainability related behavior change.

In addition, sustainability teams make general presentations with more specific discussion of the EO 13693 goals and needed actions to increase awareness at LM and LMS All-Hands meetings, monthly safety meetings, and meetings with site leads and managers, task managers, and project planning personnel.

1.1.3 Response to additional SSP guidance questions

[a.] LM's overall Scope 1 and 2 GHG reduction strategy is to identify the emission sources and develop ways to reduce emissions while understanding that adding more sites and scope to LM responsibilities will result in an increased need for travel to these sites and travel-related GHG emissions.

[b.] To optimize office space, LM will complete a 360 review of office space standards and come up with guidelines for the design of new offices and cubicles.

[c.] Fugitive emissions are a small fraction of LM's Scope 1 GHGs. The combined fugitive emissions are less than 1 metric ton of carbon dioxide (CO_2) equivalent. LM does not expect significant increases or impacts from these emissions. When possible, LM will reduce fugitive emissions. LM will inspect chemical containers and gas cylinders as necessary to reduce potential spills and leaks. In 2012, fugitive emissions, including sulfur hexafluoride (SF_6), became part of Scope 1 GHG emissions calculations. At that time, LM surveyed its use of SF_6 and concluded it was not using SF_6 or maintaining SF_6 in its inventory; this is still true for 2016.

[d.] LM has no high-energy mission-specific facilities.

1.2 Scope 3 GHG Emissions Reductions

Reduce Scope 3 GHG emissions 25% by 2025 from a 2008 baseline; (2016 target: 7 %).

1.2.1 Performance Status

LM exceeded the 2016 target. LM reduced Scope 3 GHG emissions by about 28.4% in 2016 from the 2008 baseline year.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
GHG Emissions Summary	Reports — Comprehensive Scorecard	No	No	No
Electricity Use	Facilities — Energy	Yes	Yes	CTS LM Internal tracking documents
Gas Use	Facilities — Energy	Yes	Yes	CTS LM Internal tracking documents
Square Footage	Facilities — Energy	Yes	Yes	CTS LM Internal tracking documents
Purchased Renewable Energy	Facilities — Renewables	No	No	No
Off-Site WWT	Waste — Wastewater Treatment	No	No	No
Air Travel	Travel and Commute — Air Travel	No	No	LM Internal tracking documents
Ground Travel	Travel and Commute — Ground Travel	No	No	LM Internal tracking documents
Commute	Travel and Commute — Commute	No	No	LM 2016 Commuter Survey (see Appendix G)
Off-Site Landfill Municipal Solid Waste	Waste — Municipal Solid Waste	No	No	LM Internal tracking documents
Fully Serviced Leased	Facilities — Energy	Yes	No	LM Internal tracking documents

Abbreviations:
FIMS = Facilities Information Management System
WWT = Wastewater Treatment
CTS = Compliance Tracking System

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

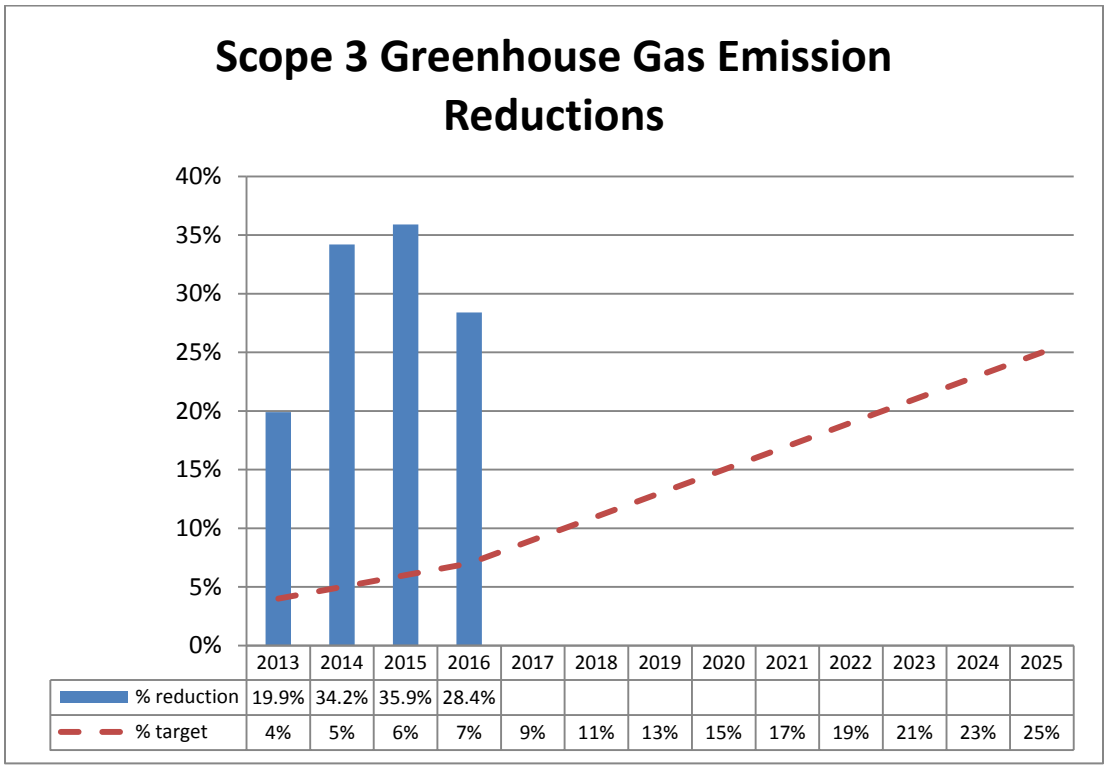
Transmission and Distribution (T&D) Losses

In 2016, there was an extended power outage for 11 weeks at the Fernald Preserve due to circuit breaker failure in the site's substation. Because the Fernald Preserve is LM's major power user, the site's outage significantly reduced the total energy usage for LM and reduced associated T&D losses.

The increase in LM's scope and number of sites between now and 2025 may affect LM's ability to achieve this goal. See Section 1.1.1.b for more detailed information.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM exceeded the interim target. LM reduced Scope 3 GHG emissions by about 28.4% in 2016 from the 2008 baseline year. Figure 2 shows progress toward the annual targets based on current annual GHG emissions.



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

Figure 2. Scope 3 GHG Emission Reductions vs. Annual Targets

LM conducted a 2016 commuter survey. LM used lessons learned from the 2014 commuter survey effort in the design of the 2016 survey, which resulted in more precise survey results. Overall, LM observed that commuter mileage was higher and the number of commuter days

decreased due to corrections for alternate work schedules and teleworking. LM will use information gathered from the survey to identify opportunities for initiatives in this area.

The LMS contractor's air travel–related GHG emissions were higher in 2016 due to increased long-haul travel; the LMS contractor's air travel–related GHG emissions increased by 23 metric tons in 2016 from 2015. This will increase as more sites and scope are added to LM's responsibility. The LMS contractor's ground travel–related GHG emissions decreased by 7 metric tons from 2015. The SPO will be updating LM federal employee business travel information in the Dashboard at a later date. LM used 2014 data as a federal placeholder in the Dashboard.

LM uses the following best management practices to reduce Scope 3 emissions:

- Require all new agency lease solicitations for fully serviced leases over 10,000 rentable square feet to include requirements for lessors to disclose energy consumption and carbon emissions data.
- Utilize the Cisco TelePresence Management Suite tracking and reporting tools to track video conferencing and provide an estimated CO_2 savings report. According to the CO_2 savings report, LM has saved an equivalent of 5000 metric tons of equivalent CO_2 emissions by video conferencing.
- Consolidate trips, use video conferences and teleconferences, use instant messaging or video chat instead of face-to-face meetings, travel only when necessary, and carpool when possible during business trips. LM used webinars to enhance job skills, as well as other seminars and training sessions provided by federal and state agencies and educational institutions. Here are some examples:
  - LM held its annual All-Hands training in Washington state. The training included a visit to the Hanford site. LM pays specific attention to sustainable details such as vanpooling between the airport, the training location, and various sites instead of using individual cars.
  - LM conducts its annual EMS management review via video conferencing, which significantly reduces travel. Twenty-eight individuals participated from six different locations.
  - Sustainability team members participate in Federal Energy Management Program (FEMP) First Thursday Seminars addressing energy and sustainability topics.
- Continue to upgrade processes and increase efficiencies at LM sites where feasible to reduce overall energy use and respective GHG emissions.
- Continue to promote source reduction, recycling, and reuse during project planning, design, and implementation activities. Pollution prevention is a mandatory part of subcontract language to ensure that all personnel working on LM projects reduce the amount of waste generated and recycle to the extent possible. See Section 7 for more detailed information on waste minimization.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

1.2.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will be supporting the DOE 2025 GHG reduction target by meeting the 2017 target of an 8% reduction in Scope 3 GHG emissions through efforts in the following areas:

- Continue to encourage employees to carpool and use public transportation to the extent possible.
- Continue to 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.
- Continue to pursue installation of additional RE systems where cost effective, and maintain operation of the existing system.
- Review the recycling programs at select sites for potential improvement opportunities.
- Develop new leases or terms of occupancy extensions involving substantial changes to operating conditions or contract documents to comply with Executive Order (EO) 13693, *Planning for Federal Sustainability in the Next Decade* (see Section 2.5.2.a). LM uses the U.S. General Services Administration (GSA) lease template, which is designed to meet all applicable EO requirements.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to evaluate and implement ways to reduce business ground and air travel.
- Perform energy evaluations to identify system modifications or equipment replacements that could increase energy efficiency.
- Incorporate the LMS *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies* (LMS/PLN/S12185) into planning other LM projects.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

1.2.3 Response to additional SSP guidance questions

[a.] At this time, LM's overall Scope 3 GHG reduction strategy is to continue to track all Scope 3 GHG emission sources. One key emission source is electrical T&D systems. LM is replacing older transmission systems at staffed sites, as appropriate, to help support this strategy. LM will continue to identify large contributors and develop strategies to reduce these emissions.

[b.] LM promotes carpooling, alternative work schedules, and work-from-home days, which can save transit time and reduce GHG emissions. The LMS Employees' Association occasionally sponsors onsite luncheons at some sites, as well as onsite, commercial food deliveries, which helps reduce personal vehicle use during lunch hours.

[c.] LM's mission is to manage Cold War–related, post-closure sites and to protect human health and the environment at those sites. Because of the nationwide distribution of LM sites, travel is an integral part of day-to-day LM activities. LM uses teleconferencing services and virtual-presence software to conduct meetings. LM will continue to reduce business travel to the extent practical. Where feasible, LM personnel share business rental cars or use mass transit while attending out-of-town meetings and events.

[d.] LM conducted a new commuter survey in 2016 using a logic-based online survey system. LM will use information gathered from the survey to further identify opportunities for initiatives in this area. Refer to Appendix G to see the LM 2016 Commuter Survey.

[e.] LM staffed sites actively recycle municipal solid waste and plan projects to reduce and recycle waste. The Fernald Preserve has larger amounts of organic material waste than other sites, and that waste is reused onsite as mulch or soil enhancements. See Section 7 for details.

[f.] LM tracks utility use at LM fully serviced, leased facilities greater than 10,000 gross square feet (GSF) in Portfolio Manager. LM will require any new lease solicitation for over 10,000 rentable square feet to include requirements for lessors to disclose energy consumption data. LM will comply with EO 13693 for any actions taken that go beyond simply exercising an option to extend the term of occupancy, or involves substantial changes in the operation conditions or tenant fit-out, or requires more than a simple contract amendment document, shall comply with.

[g.] LM sites are generally located on former processing or disposal sites and in remote locations. Therefore, they are not typically pedestrian friendly, accessible to public transit, or near planned town centers. LM considers these accommodations in new planning to the extent practicable. Apart from the LM office at Westminster, LM is not planning on building or leasing new facilities outside of the existing site locations at this time.

2 Buildings, Energy Savings Performance Contract (ESPC) Initiative Schedule, and Regional and Local Planning

2.1 Energy Intensity Reduction

The National Energy Conservation Policy Act (NECPA), as amended by the Energy Independence and Security Act (EISA) in 2007, required DOE to reduce its energy intensity (EI) by 30% by 2015 from a 2003 baseline. EO 13693 requires a 2.5% reduction per year in energy intensity from a 2015 baseline, for a total of 25% reduction from 2015 levels by 2025.

2.1.1 Performance Status

LM missed the 2016 target by increasing EI by 4.6% from the 2015 baseline. However, a requested baseline change to the SPO for 2015 data should improve that number.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Energy Use Intensity	Reports — Comprehensive Scorecard	Yes	No	LM internal tracking documents
Square Footage	Facilities — Energy	Yes	Yes	LM internal tracking documents
Electricity Usage	Facilities — Energy	Yes	Yes	CTS LM internal tracking documents
Natural Gas Usage	Facilities — Energy	Yes	Yes	CTS LM internal tracking documents
Diesel Usage	Facilities — Energy	Yes	No	LM internal tracking documents
Propane Usage	Facilities — Energy	Yes	Yes	CTS
Training	Evaluations, Measures, and Funding — Training and Education	Yes	No	LM internal tracking documents

Abbreviations:
FIMS = Facilities Information Management System
CTS = Compliance Tracking System

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

The increase in LM's scope and number of sites between now and 2025 may affect LM's ability to achieve this goal. See Section 1.1.1.b for more detailed information.

LM's highest energy use is not due to energy use in buildings, but rather in other structures and remediation processes, such as the 20 large groundwater extraction wells at the Fernald Preserve (which consume more than 50% of the power used by LM). In June 2014, The Fernald Preserve

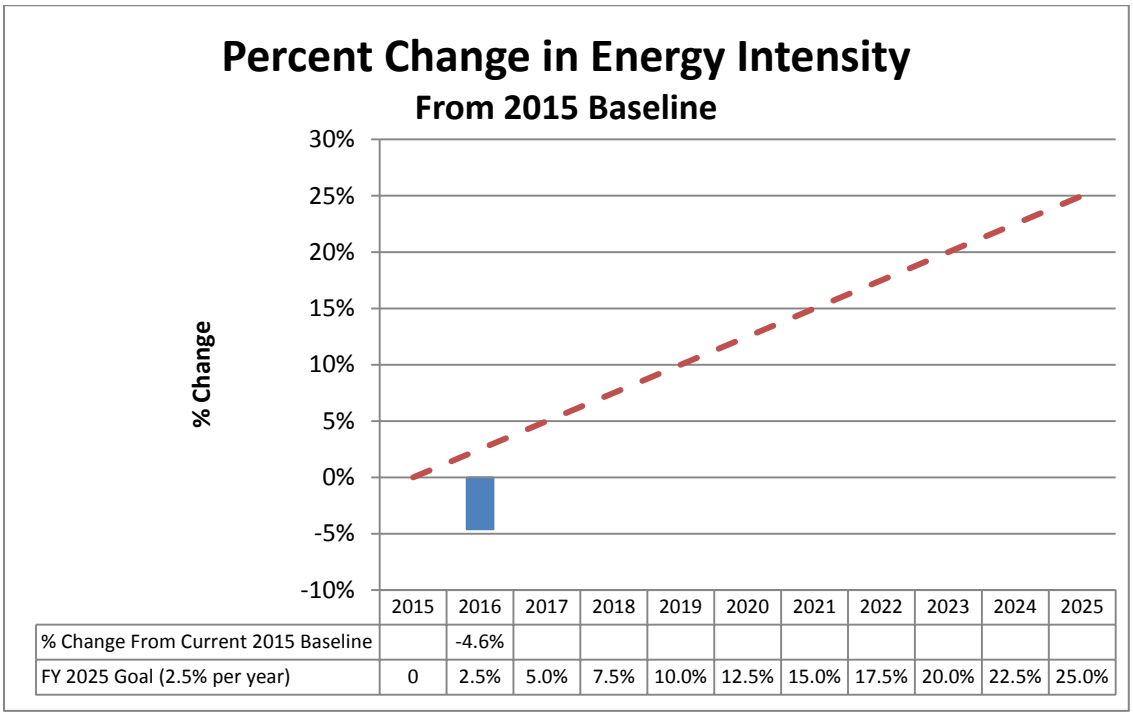
staff installed new controls that included dedicated meters for the Fernald Preserve well field. The Fernald Preserve wells were metered for a full year in 2015, allowing their energy use to be totally excluded from the EI calculation. LM is using the EISA Exclusion G, which allows mission-related energy use (that is separately metered and reported annually) to be excluded from the EI calculation. LM discovered that excluded electrical usage at the Fernald Preserve was over reported in 2014 and 2015, resulting in covered electrical and excluded usage not being correctly reported for those years. See Attachment F, "Explanation of Differences on Reporting."

Two additional changes impacted the EI performance in 2016.

- There was an extended power outage for 4 months at the Fernald Preserve due to circuit breaker failure in the site's substation. Because the Fernald Preserve is LM's major power user, the site's outage significantly reduced the total energy usage for LM and increased the associated EI goal performance. Fourteen of the total 20 extraction wells, which are very high energy users, remained offline until the power was restored, which also contributed to reduced energy use. This reduced energy use was somewhat offset by the use of diesel and gasoline generators at Fernald to power some buildings.
- LM reclassified one facility in Facilities Information Management System (FIMS) from a building to other structure and facility (OSF), thus reducing overall GSF for goal subject facilities.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM did not meet the 2016 EI target, increasing EI by 4.6%. However, a requested baseline change to the SPO for 2015 data should improve that number. Figure 3 graphically shows the percentage of change in EI since 2008.



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
% Change From Current 2015 Baseline		-4.6%									
FY 2025 Goal (2.5% per year)	0	2.5%	5.0%	7.5%	10.0%	12.5%	15.0%	17.5%	20.0%	22.5%	25.0%

Figure 3. Percent Change in Energy Intensity from current 2015 Baseline

As evidenced in Figure 4, overall electrical consumption at LM sites, including excluded electrical use, has been reduced. The main reasons for the reduction are operation of the more efficient Fernald Preserve well controls for the full year, and as noted in Figure 4, a major power disruption at the Fernald Preserve from July to September 2016. This power disruption resulted in the shutdown of 14 of 20 of Fernald's large extraction wells. The Fernald Preserve extraction wells account for over 50% of LM's total energy use. There was a large increase in the use of diesel fuel to power emergency generators, but these were only used to power some of the affected buildings and not the 14 affected high energy consuming extraction wells.

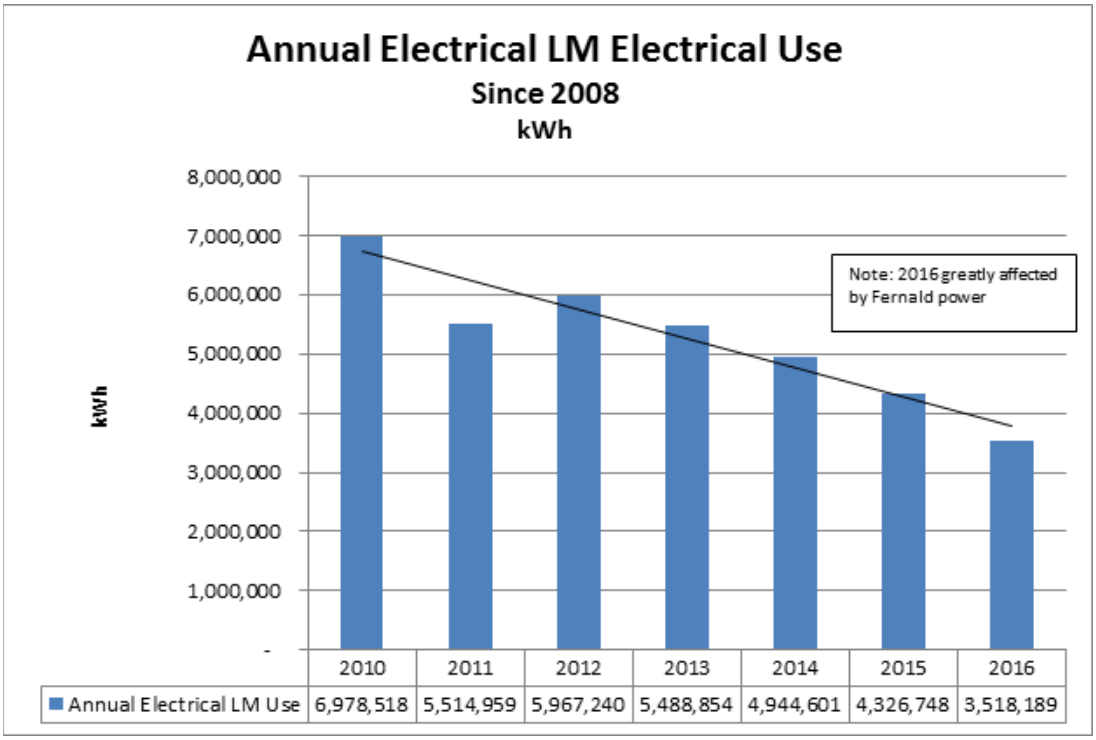


Figure 4. Annual LM Electrical Usage

Showing management's commitment to reduction in energy, during last year's EMS Annual Management Review, senior management requested the following actions:

- Provide site-specific energy use to the site leads and managers.
  - A report was subsequently submitted to site leads and managers.
- Review sites to be transitioned into LM over the next 5 years to determine if any sites are expected to have high energy use and then project how that would affect LM energy use goals in the future.
  - A review identified that no new sites were expected to have high energy use.

LM accomplished an internal target to pilot smart power strips and Kill-A-Watt meters at three locations. Volunteers at three office locations were asked to participate in this test. They were asked to connect their existing office power strip to a provided Kill-A-Watt meter, which records energy use. Energy use was monitored for one month. The loads connected to the existing power

strip were then switched over to a smart power strip and monitored for another month. A smart power strip totally disconnects loads when a master load is shut down. In this case, the master load was the office computer. Many electronic devices continue to draw some power even when shut down. These are called vampire loads. The idea was that the smart power strip would eliminate these vampire loads. Unfortunately, no appreciable difference in power usage was observed between the two tests. This is most likely because computers are the main load in the offices and not much effect can be achieved by shutting other small loads off.

LM conducted energy evaluations for the Fernald Preserve and the Weldon Spring sites in 2016. Reports were sent to the site leads and managers to evaluate the recommendations.

LM continued to use the following best management practices for energy reduction:

- Set heating, ventilation, and air-conditioning (HVAC) controls at several locations to decrease energy use as applicable. It is recommended that heating units be set at 68^{o} and cooling units be set at 76^{o}.
- Used employee incentive programs to reward exceptional individual and team performance in increasing energy efficiency and water conservation, deploying RE, minimizing waste, reducing utility costs, and reducing GHG emissions.
- Included a results-based energy management component in some LM manager's performance evaluations.
- Used project-planning tools (e.g., Project/Activity Evaluation, Statement of Work) to consider ways to reduce energy consumption.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating, and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO

LM discovered that excluded electrical usage at the Fernald Preserve was over reported in 2014 and 2015, resulting in incorrect reporting for covered electrical usage. See Attachment F, "Explanation of Differences on Reporting."

2.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

With the following activities, LM expects to continue to reduce EI:

- Constructing a new building at the Weldon Spring site, with occupancy taking place in 2019. To the extent practicable, this building will comply with the revised GPs, which include energy efficiency.
- Downsizing and redesigning the Converted Advanced Waste Water Treatment facility at the Fernald Preserve will reduce overall energy usage and associated EI percentage. Total usage reductions will not be realized until after optimization of the treatment system is completed in 2018.

- Continuing to investigate the U.S. Environmental Protection Agency's (EPA's) Green Button initiative to provide customers with utility usage information, as well as any other demand-side management programs offered by utilities. If a utility was to implement Green Button, that information would provide a more comprehensive look at utility use throughout the day, thus providing possible opportunities to reduce demand and energy usage.
- Investigating ways to reduce energy in goal-excluded (not covered) buildings in 2017. Although excluded from tracking, improvements in those buildings can still be included in EI calculations.

b. Expected site contribution to the DOE goal(s)

LM is currently exceeding this DOE goal compared to the 2003 baseline. LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to use best management practices for energy reduction at several locations, such as installing setback HVAC controls, retrofitting T12 fluorescent fixtures with T8 fluorescent tubes and associated ballasts, using benchmark utilities in Energy Star Portfolio Manager, installing meters, and performing assessments and verifications.
- Continue to assess energy reduction as a factor in the decision process for maintenance and repairs. This includes identifying deferred maintenance for energy-consuming buildings and facilities once every 5 years via the Condition Assessment Survey (CAS) and updating the status of all deferred maintenance annually, as required by DOE Order 430.1C.
- Improve integration of LM's Energy team planning and implementation of actions with the site project planning teams to collaborate with them in achieving sustainability goals.
- Communicate sustainability goals to site project planning teams, and collaborate in achieving those goals. In addition, increase communication of sustainability goals to all personnel.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, employees will continue to attend energy-related workshops or symposiums to enhance their knowledge base and maintain certifications.

2.1.3 Response to additional SSP guidance questions

[a.] Use of recommended tools listed in EO 13693 Section 3(a)(i) is provided below:

- **Remote building energy performance assessment auditing technology:** LM has the capability to remotely access building energy use at the Weldon Spring and the Tuba City sites through the SOARS system. The SOARS system collects data every 5 minutes. The data is available on the SOARS website to be downloaded and analyzed. If other sites are connected to SOARS, the same remote access to building energy use will be explored. At the Monticello, Utah, Disposal and Processing Sites, control of the Groundwater Contingency Remedy Optimization System and the Disposal Cell Pumping System are connected through SOARS to allow remote monitoring and control of the systems. The main target in 2017 is to evaluate remaining buildings for replacement with or addition of SOARS meters.
- **Demand management program:** The Fernald Preserve; Grand Junction, Colorado, Disposal Site; Tuba City site; and Weldon Spring site have demand charges on their electric bills. Only the Fernald Preserve has large motor loads due to its 20 extraction wells, but most of these wells run almost continuously. These sites do not have a lot of changing loads that would be responsive to demand monitoring but will be periodically reevaluated.
- **EPA Energy Star Portfolio Manager:** LM enters all required LM building energy use into the EPA Energy Star Portfolio Manager.
- **Green Button data:** An initial investigation of LM's utility providers indicated that none of the utilities has implemented or is planning to implement the Green Button initiative in the near future. If a utility were to implement a Green Button program, that information would provide a more comprehensive view of utility use throughout the day, thus possibly providing opportunities to reduce demand and energy usage. LM will periodically contact the utility companies to determine when they may implement Green Button or other demand management programs.
- **Implementing space utilization and optimization practices and policies:** LM staff at the Westminster office expects to move to a new office located near the existing office in June 2017. The new building will be more energy efficient than the existing offices because the interior will be built to Energy Star standards. LM is planning on interior office space being an average of 175 square feet per employee.

  LM will continue to use movable office partitions as its work force grows and space needs shift over time. These partitions provide much more flexibility for reconfiguration than built-in-place walls and provide cost savings.

  LM will develop new leases or terms of occupancy extensions involving substantial changes to operating conditions or contract documents in compliance with EO 13693.
- **Test-bed technologies:** LM will evaluate applicable test-bed technologies proposed by the sustainability team, site managers, and project planning personnel for their feasibility. If they are found to be feasible, LM will submit for approval the necessary budget, design, and installation documentation.
- **City energy performance benchmarking and reporting requirement:** LM will continue investigating city energy performance benchmarking and reporting requirements in 2017.

[b.] LM excludes several buildings and processes from the EI goal. Attachment B includes the final Dashboard data excluded building list and certification letter.

[c.] LM identifies deferred maintenance for energy-consuming buildings and facilities in each site-specific CAS as required by DOE Order 430.1C and updated annually in FIMS. LM has recently completed 2016 CAS inspections and 2017 assessments are underway. LM will complete deferred maintenance, including energy efficiency improvements identified in these assessments, as funding allows.

[d.] LM has one new building to design on the planning horizon in regard to EISA Section 433 fossil fuel reduction in new buildings or, if cost effective, to investigate in regards to RE, clean energy, or net-zero energy project options.

[e.] To demonstrate core competencies for facility managers as identified by GSA in the Federal Buildings Personnel Training Act of 2010, the certified energy manager took required training during the past year to maintain the certification. LM EMS coordinator presented information on the GSA Sustainable Facilities Tool (SFTool), which includes a module to track core competencies. Personnel from the LMS Training department and the certified energy manager will be testing this tool in 2017. The LMS Training department tested the SFTool Green the Building game for continuing education credit and provided instructions to EMS personnel. The Training department will also work with the Grand Junction Office Facilities Management manager to attempt to apply training that Facilities Management personnel have already taken to see what training they need to qualify to become a certified GSA facility manager.

Training on energy conservation and recycling is already included in the periodic sustainability training provided to LM employees and is included in its employees' orientation programs.

[f.] The Sustainable Buildings team works with other sustainability teams, engineers, and design professionals as part of an integrated team to ensure all new construction is designed to be 30% more energy efficient than the baseline established by American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)/Illuminating Engineering Society of North America Standard 90.1. As of September 2016, the version in effect was ASHRAE 90.1 2010.[2]

[2] Volume 78 *Federal Register* pages 40945–40953, "Energy Efficiency Design Standards for New Federal Commercial and Multi- Family High-Rise Residential Buildings," http://www.gpo.gov/fdsys/pkg/FR-2013-07-09/pdf/2013-16297.pdf.

2.2 EISA Section 432 Energy and Water Evaluations

EISA Section 432 requires energy and water evaluations to be conducted every 4 years.

2.2.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Energy Evaluations	No	No	No	CTS, LM internal tracking documents
Water Evaluations	No	No	No	CTS, LM internal tracking documents

Abbreviations:
FIMS = Facilities Information Management System
CTS = Compliance Tracking System

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM completes water and energy evaluations during regularly scheduled site inspections or CASs, when feasible. This reduces the number of needed trips and conserves natural resources (especially fuel).

LM conducted the following EISA 432 evaluations in 2016 and submitted reports to the site leads and managers for consideration.

Planned EISA Section 432 Evaluations		
Year	**Energy Evaluations**	**Water Evaluations**
2016	Fernald Preserve Weldon Spring site	Fernald Preserve Monticello site

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

2.2.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will continue to evaluate sites on a rotating basis to ensure that 100% of the sites are evaluated every 4 years to meet the requirements of EISA Section 432. The chart below shows the years and locations of planned EISA energy and water evaluations.

Planned EISA Section 432 Evaluations		
Year	**Energy Evaluations**	**Water Evaluations**
2017	Monticello site Monument Valley, Arizona, Processing Site Shiprock, New Mexico, Disposal Site	Grand Junction, Colorado, Disposal Site (P) Rifle, Colorado, Processing (Old) Site (P)
2018	Tuba City site	Tuba City site (P)
2019	Grand Junction disposal site Rifle processing (Old) site Pinellas site	Weldon Spring site (P)
2020	Fernald Preserve Weldon Spring site	Fernald Preserve (P/ILA) Monticello site (P)
2021	Monticello site Monument Valley site Shiprock site	Grand Junction disposal site (P) Rifle processing (Old) site (P)

Abbreviations:
ILA = industrial, landscaping, and agricultural (non-potable) water site
P = potable water site

Recommendations from the energy and water evaluations are shared with the LMS site lead and LM site manager for implementation feasibility. As part of continual improvement, LM will be reevaluating the distribution of the recommendations, to identify opportunities for use of the lessons learned by other staff, and also review how projects are approved and funded.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to benchmark EISA-covered facilities in Energy Star Portfolio Manager.
- Perform measurement and verification of implemented energy saving measures and projects as needed.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

2.2.3 Response to additional SSP guidance questions

[a.] LM selects sites for evaluation on a rotating basis to ensure that 100% of the sites are evaluated every 4 years. LM has been able to meet the 4-year cycle for conducting energy and water evaluations and foresees no issues with completing them on schedule in the future. LM combines energy and water evaluations with CASs when possible.

[b.] LM shares the evaluation reports with the respective sites. As part of continual improvement, LM will be reevaluating the level of line management to which the recommendations are distributed to identify opportunities for use of the lessons learned by other staff, and will also review how projects are approved and funded.

[c.] LM uses Energy Star Portfolio Manager to benchmark all of LM's metered and covered buildings and ensure that (1) energy consumption is appropriate for these buildings compared to national averages and (2) high-performance and sustainable building (HPSB) GP buildings are operating as intended after energy conservation improvements were made.

[d.] No new projects have been identified to implement continual measurement and verification as part of LM's EISA evaluations.

[e.] LM updated covered facilities data in the 2016 Dashboard under Goal Subject Facilities to ensure that metered building energy and water consumption remain above the 75% threshold for covered energy use; 97.3% of LM's energy use is metered.

[f.] Planned and completed evaluation dates, type and level information, including recommissioning and retro-commissioning and benchmarking status information were updated in the June 2016 EISA 432 data call. LM will upload this in the Dashboard when that field is available later this fiscal year.

[g.] Facilities are selected as "covered" if they meet the EISA Section 432 requirements. LM covered facilities have the following characteristics: they are LM-owned, LM pays for the utilities, and more than de minimis energy is consumed. However, the vast majority of LM's electricity is consumed by the well field at the Fernald Preserve, which is not associated with a covered facility. The 20 wells in this well field were individually metered in July 2014, and the wells accounted for over 50% of LM's electrical use metered in 2016.

2.3 Metering

Meter all individual buildings for electricity, natural gas, steam, and water, where cost-effective and appropriate.

2.3.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Electric Meters	Facilities — Metering and Benchmarking	Yes	Yes	Compliance Tracking System LM Internal tracking documents
Natural Gas Meters	Facilities — Metering and Benchmarking	Yes	Yes	Compliance Tracking System LM Internal tracking documents
Water Meters	Facilities — Metering and Benchmarking	Yes	Yes	Compliance Tracking System LM Internal tracking documents

Abbreviations:
FIMS = Facilities Information Management System
CTS = Compliance Tracking System

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

With the new control system for the Fernald Preserve well field, which included individual metering and was in place for the entire year, LM was able to exceed the 90% metering goal.[3]

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM uses metering information for benchmarking, reporting, system diagnostics and maintenance, and measurement and verification of savings. Here is a summary of LM's metering accomplishments for appropriate Energy Policy Act of 2005 (EPAct 2005) buildings:

- 97.3% of LM's electrical usage is individually metered as of 2016.
  - This includes buildings and processes.
  - Approximately 86% of the metering is standard and 11% is advanced.
- 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 has no steam or chilled-water systems to meter.

[3] The NECPA, as amended by the Energy Policy Act of 2005, requires installation of electrical meters by 2012 on all individual buildings, with the use of advanced electrical meters to the maximum extent practicable. EISA 2007 added a requirement that all appropriate buildings must also be metered for steam and natural gas by 2016.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

In October 2015, the water at the Tuba City site was tested and deemed to be potable. The metered water at the site was previously reported as nonpotable industrial, landscaping, and agricultural (ILA) water but will be reported as potable from October 2016 forward. No water meters were installed or removed as a result of this change.

2.3.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

With the following activities, LM expects to continue to comply with metering requirements:

- Review all of LM's standard meters to determine if upgrading to advanced meters would be practicable. In upcoming years, upgrade standard meters to advanced meters as practicable.
- The LM certified energy manager will visit the LMBC to investigate the best method for determining the LMBC data center's power utilization effectiveness (PUE).
- As a best management practice, LM will install metering devices (either advanced or standard) in each building, in other facilities, and on site grounds to measure electricity, natural gas, and water use to the maximum extent practical and when cost effective.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Evaluate utility (electrical and water) information that is being benchmarked in Energy Star Portfolio Manager.
- Provide site leads and managers with building-specific utility trending information produced from metering data.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

2.3.3 Response to additional SSP guidance questions

[a.] LM buildings did not identify any buildings as being appropriate for further metering in this year's Dashboard. A metering plan is not required.

2.4 Existing HPSB Buildings

At least 17% (by building count) of existing buildings greater than 5000 GSF will be compliant with the *revised* GPs[4] for HPSBs by 2025, with progress toward 100% thereafter.

2.4.1 Performance Status

LM exceeded this goal in 2016.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Building Inventory Changes	Facilities — Building Inventory Change	Yes	Yes	LM internal tracking documents
Guiding Principles	Facilities — Building Inventory Change, Green Buildings	Yes	Yes	CTS LM internal tracking documents
Square Footage	Facilities — Building Inventory Change	Yes	Yes	CTS LM internal tracking documents

Abbreviations:
FIMS = Facilities Information Management System
CTS = Compliance Tracking System

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

[4] Guiding Principles for Sustainable Federal Buildings

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM successfully exceeded this goal; 50% of LM's buildings greater than 5,000 GSF meet the GPs.

LM successfully modified space at the LM office in Grand Junction to create space for new hires. At the time of this publication, there have been 30 new hires in the Grand Junction office since the contract change. In early 2016, traditional space planning focused on placing new workers in fixed offices. Since then, significant cost savings have been attained by dividing existing office space by adding movable office partitions to fixed offices and by converting existing library space to office space. The movable partitions are a less expensive and more sustainable solution to personnel growth where existing space allows.

LM utilized the following best management practices:

- A Sustainable Buildings team member is currently training to become an alternate account manager for Energy Star Portfolio Manager.
- The LM EMS coordinator attended the 2016 Energy Exchange, which included training sessions on the GPs and a pre-Energy Exchange workshop, *2016 Guiding Principles Overview*.
- LM performed an HPSB survey using the revised GPs and associated instructions[5] on the Fernald Visitors Center at the Fernald Preserve in May 2016 as part of the EISA 2007 Section 432 quadrennial energy evaluation. This survey also included evaluating GP VI, *Assess and Consider Climate Change Risks*. The Fernald Visitors Center complied with all the GPs.
- LM annually updates HPSB GP survey checklists for all owned and leased buildings greater than 5000 GSF, and notes any changes affecting a building's compliance score. LM maintains these checklists and regularly updates LM's EMS SharePoint site and Energy Star Portfolio Manager. Sustainability considerations are 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.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

[5] Guiding Principles for Sustainable Federal Buildings and Associated Instructions, February 2016

2.4.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

To pursue meeting 100% of the GPs, LM will continue to monitor its existing building inventory, and will identify and evaluate owned buildings that measure greater than 5000 GSF and are transitioning to LM in 2017 and beyond. HPSB surveys will be conducted on these facilities relative to EO 13693 and the 2016 GPs. The impact of these planned activities will assist in the decision-making process for prioritizing future sustainability measures that need to be taken to meet this 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 Weldon Spring Interpretive Center in support of the long-term mission for Weldon Spring site. To the extent practicable, this building will comply with the revised GPs.

b. Expected site contribution to the DOE goal(s)

LM is exceeding this DOE goal. LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Sustainable Buildings team members will broaden their knowledge base of the upcoming revised GPs on climate-resilient design and management, net-zero buildings, and Energy Star Portfolio Manager through online training and webinars.
- Continue to proactively support energy-efficiency and water-saving improvements for buildings that, based on square footage and construction costs, do not require adherence to either the HPSB GPs or third-party certifications.
- Continue tracking utilities in Energy Star Portfolio Manager and make comparisons to baseline figures to demonstrate improvements in energy and water usage or, if necessary, address areas needing improvement.
- Continue to pursue achieving 100% of the GPs in the existing building inventory greater than 5000 GSF. HPSB assessment checklists will be updated annually, and any changes affecting a building's alignment with GPs status will be noted. These checklists, utility information, and supporting documentation will be maintained and updated regularly in Energy Star Portfolio Manager. Data from these checklists will be used for Dashboard reporting purposes and to respond to requests from DOE Headquarters.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

2.4.3 Response to additional SSP guidance questions

[a.] In 2014, LM exceeded the compliance goal of 15%. At that time, 71.4% (5 of 7 buildings) of its existing owned and leased buildings greater than 5000 GSF met the 2008 GPs. In accordance with Council on Environmental Quality (CEQ) Implementing Instructions for EO 13693, existing buildings that were certified as meeting the GPs on or before September 30, 2015, are grandfathered in and are considered to be in compliance and can be counted toward the 2025 goal. In the instructions for the 2016 GPs, leases will no longer be included in calculating compliance with the GPs. LM owns two buildings in its inventory, with one still complying to the 2008 GPs. Status is tracked in Energy Star Portfolio Manager and the Dashboard.

[b.] To make progress toward 100% GP compliance, LM will continue to monitor its existing building inventory, and will identify and evaluate owned buildings that measure greater than 5000 GSF and any new facilities transitioning to LM in 2017 and beyond.

[c.] The GPs and related assessment processes have been incorporated into LMS's *Environmental Management System Sustainability Teams Manual* (LMS/POL/S11374), also called the EMS Sustainability Teams Manual. LM will update this manual to include the revised GPs and EO 13693 sustainable buildings goals.

[d.] Climate-resilient design and management elements shall be considered in future operations, repairs, and renovations of existing agency buildings. Plans to accomplish this will include no-cost, online training and webinars as they become available. Attendance at national meetings and conferences will be considered if cost-effective. In addition, the Sustainable Buildings team will work with other sustainability teams, such as the Energy and Climate Change Adaptation teams, on climate-resilient design and management.

2.5 Regional and Local Planning

Increase regional and local planning coordination and involvement efforts.

2.5.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

None.

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

Because LM's 91 sites (approximately 62 of which are visited regularly) 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 local and regional planning efforts are focused on ecosystem, watershed, and environmental management. At most sites, coordination with regional and local stakeholders and regulators is part of the formal agreements.

One facility change and two major initiatives that affected or will affect LM's regional and local planning goals occurred during 2016:

- 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 Weldon Spring Interpretive Center in support of the long-term mission (community education) for the Weldon Spring site. The new facility will house both the interpretive center and LM employees and is expected to open in 2019.
- On June 20, 2014, President Obama issued a Presidential Memorandum, *Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators*, establishing an interagency Pollinator Health Task Force to develop a national strategy promoting the health of bees, butterflies, other pollinating insects, birds, and bats. On October 19, 2015, the Secretary of Energy issued the DOE Pollinator Protection Plan, which established two goals: (1) identify within 12 to 18 months those sites appropriate for the adoption of the practices and procedures listed in the *Pollinator-Friendly Best Management Practices for Federal Lands*, and (2) evaluate and adopt best management practices on a site-by-site basis over a 10-year time frame. LM completed the first goal in June 2016. LM will coordinate with local agencies, organizations, and landowners to complete the second goal over the next several years.
- On October 7, 2015, the Office of Management and Budget, CEQ, and White House Office of Science and Technology Policy issued a memorandum to federal agencies entitled "Incorporating Ecosystem Services into Federal Decision-Making." The memo directed DOE to provide to CEQ a (1) narrative description of current DOE ecosystem services activities and policies, and (2) work plan describing how DOE will further implement ecosystem services. LM submitted the narrative description to SPO in February 2016. DOE is currently in the process of preparing the work plan, which will describe how LM and other DOE offices will integrate ecosystem services into their everyday activities. Implementation of the second requirement will require considerable regional and local coordination.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

The following success stories occurred in 2016:

- At the Fernald Preserve, LM manages the 75-acre On-Site Disposal Facility (OSDF) that contains buried, contaminated soil and building materials from the former uranium processing plant. The surface (or "cap") of the OSDF has been managed as a grassland

prairie since it was restored in 2006. Management practices on the OSDF historically consisted of mowing, raking, and baling to remove thatch and promote the continued establishment of native grasses and forbs. In 2009, LM ecologists proposed that prescribed fire be used to manage the cap, as it is a more natural and sustainable method for managing prairie communities. However, local stakeholders had reservations about the safety of burning, and LM opted to continue the historical method. In 2015, LM revisited the prescribed fire issue and recommenced discussions with stakeholders. This time, the public was provided information on the planning and implementation of prescribed burns elsewhere on the Fernald Preserve and was invited to observe the execution of a successful site burn. This approach led to stakeholder acceptance of the practice, and in March 2016, LM completed a prescribed burn on the caps of three of the eight OSDF cells. The burn was successful and resulted in several benefits from a land stewardship and cost perspective.

- The Gunnison, Colorado, Disposal Site, an UMTRCA Title I site located in Gunnison County, Colorado, is a 115-acre site that includes a 29-acre unvegetated disposal cell. LM and BLM are in the process of establishing a right-of-way that will contain stipulations to protect the Gunnison sage-grouse, a federally threatened species, and its habitat. Those restrictions include a ban on travel to the site by LM personnel each year during the sage-grouse mating season from mid-March through late May.
- The Gas Hills North, Gas Hills East, and Split Rock, Wyoming, Disposal Sites are UMTRCA Title II sites that are scheduled to transition to LM in 2018 and 2019. In March 2016, BLM renewed three right-of-way grants for these areas that are under consideration for withdrawal. The BLM wildlife biologist determined that the areas lie within suitable nesting and brood-rearing habitat for the greater sage-grouse, a bird of conservation concern. The right-of-way grants included provisions restricting and prohibiting surface-disturbing or disruptive activities in sage-grouse nesting and early brood-rearing habitats within the mapped habitat that are important for connectivity or within 2 miles of occupied or undetermined leks between March 15 and June 30. The BLM wildlife biologist also determined that the project area lies within suitable ferruginous hawk and peregrine falcon habitat. Another restriction included is to avoid surface disturbance or disruptive activity or occupancy within a 0.75-mile buffer between February 1 and July 31 for ferruginous hawks and peregrine falcons. LM agreed not to perform work at the sites during these times and will avoid activities altogether, if possible, in the habitat for the birds. LM's actions will be contributing to a collaborative effort in Wyoming and 10 other western states, as well as federal agencies, private landowners, and non-profit organizations that have stabilized greater sage-grouse populations.
- 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 its C-SR-13 uranium lease tract in southwestern Colorado. In 2016, DRRP and LM staff worked together to treat noxious weed infestations along the corridor, and LM staff provided a presentation, "U.S. Department of Energy's DRRP Weed Control and Monitoring Efforts," to DRRP members at their winter meeting.

The following accomplishments occurred in 2016:

- LM heightened its focus on reusing properties for the conservation of natural resources and preservation of wildlife habitats. LM developed a strategy for screening its DOE-owned and DOE-managed sites for possible conservation reuse activities (completed in November

2015) and completed the actual screening in April 2016. The internal summary report, *U.S. Department of Energy Office of Legacy Management Conservation Reuse Screening Results,* provides specific recommendations regarding conservation reuses at sites with high, medium, and low reuse potential. LM has hired a permanent full-time reuse manager to explore and develop the reuse options on legacy sites.

- LM recognizes that long-term care activities are local and that stakeholder involvement is integral to the success of LM operations. LM made considerable efforts to educate future generations on the historical aspects of the Cold War activities, the enduring environmental impacts of those activities, and how site cleanup can be performed sustainably. A few examples of LM stakeholder communications, from local to international, are described below.
  - 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 also maintained its partnership with the University of Arizona, through which two graduate students conducted research projects that supported the LM mission.
  - In April 2016, LM hosted two open houses and a public meeting with Native Americans, including individuals and agencies, to develop relationships and provide information concerning LM's sites on Navajo Nation lands (Monument Valley and Tuba City, Arizona; Mexican Hat, Utah; and Shiprock, New Mexico).

The following ecological research projects (lessons learned) were conducted in 2016:

- LM is responsible for post-closure stewardship of UMTRCA disposal cells. Recognizing that natural processes are changing the engineering properties of disposal cell covers, LM made commitments to evaluate these changes and to study options that enhance the long-term protectiveness and sustainability of covers. During 2016, LM continued four long-term cover performance studies, which are described in Attachment E.
- LM is responsible for ongoing remediation of residual contamination in soil and shallow groundwater at several UMTRCA sites. LM continued or implemented a number of "Enhanced Natural Attenuation" studies in 2016 to seek to understand and then enhance hydrological, ecological, and microbiological processes that remove, transform, isolate, or slow the dispersion of contaminants. The five studies, which are described in Attachment E, included collaboration and cost sharing with other researchers and agencies and educational outreach to local communities.

The following best management practices were conducted in 2016:

- In spring 2016, an LM ecologist planted 125 plants of silver buffaloberry, skunkbush sumac, and Rocky Mountain juniper at the Rocky Flats site as a habitat enhancement project to increase the vegetation diversity, which primarily provided additional nutritional value to the elk herd, and provide for additional wildlife habitat.
- LM continued to implement integrated pest management techniques at its numerous sites to control the spread of noxious weeds. Biological, mechanical, cultural, and chemical methods were used during 2016. Although the practice was not implemented this year, the use of goats to control invasive weeds was assessed in an internal document, *Utilizing Goats as an Alternative Method of Weed Control at the Parkersburg, West Virginia, Disposal Site.*

Mechanical controls (cutting off the large seedhead) were first used at the Durango, Colorado, Disposal Site this year to determine if this practice would help control a particularly invasive weed, common mullein.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating, and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO

None.

2.5.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

Regional and Local Planning Coordination

- At the Rocky Flats site, LM will continue to partner with USFWS to fund and design a multipurpose facility for visitors to the Wildlife Refuge. The facility will contain historical artifacts that describe the site's Cold War history as well as its current use as a wildlife refuge.
- In Ohio, LM will continue to work with Dayton History, a 501(c)(3) nonprofit organization, to design, construct, and operate the future Mound Cold War Discovery Center (MCWDC). The MCWDC will be located in a building owned by the Mound Development Corporation and leased to Dayton History. Dayton History is consulting with the Mound Science and Energy Museum (MSEM), also a 501(c)(3) organization, to utilize components of the current MSEM exhibits and archives to create new exhibits that are tailored for a broader audience. The MCWDC is scheduled to open in October 2017.
- LM will continue to work with the U.S. Army Corps of Engineers to design and construct a new Weldon Spring Interpretive Center in support of the long-term mission (public education) at the Weldon Spring site.
- In Colorado, LM will continue to partner with the Museum of Western Colorado to renovate the historic log cabin at the LM Grand Junction office site. 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. The Grand Junction office site was listed in the National Register of Historic Places in 2016.
- LM will continue to collaborate with DRRP to restore native habitats along 3 miles of the Dolores River on its C-SR-13 uranium lease tract in southwestern Colorado.
- LM will continue to partner with neighboring agencies, landowners, and organizations to control the spread of noxious weeds on and near its properties.

Ecosystem Management, Watershed, and Environmental Management

- LM will continue an ecological restoration project in the northern forested portion of the Fernald Preserve. Ecologists will create wetland areas within a 3-acre upland "old field" (former pasture area) and plant numerous trees and shrubs to offset recent canopy loss from ash trees affected by the emerald ash borer. Design and construction is funded by the Fernald Natural Resource Trustees (DOE, Ohio EPA, and USFWS).
- LM ecologists will continue the Water Balance Cover Monitoring study at the Monticello disposal site and the Enhanced Cover Assessment Project at the Grand Junction disposal site in 2017.
- LM will coordinate with other agencies and landowners to implement pollinator-friendly best management practices on its properties.

Stakeholder and Community Involvement

- LM will continue to 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 is planning community outreach visits to three Navajo Nation locations in 2017, including Crown Point, New Mexico; Tuba City, Arizona; and the Oljato Chapter House in Oljato, Utah.
- LM will continue to encourage public participation and offer educational programs at LM sites with visitor and interpretive centers.
- LM will continue to collaborate with Diné College and the University of Arizona to support educational outreach programs and graduate research projects.
- LM will continue interactions with stakeholders at all LM sites, as required in the agreements.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Track the number of acres on which pollinator-friendly best management practices are implemented, including the types of practices implemented, in accordance with the DOE Pollinator Protection Plan.
- Continue to conduct integrated pest management activities on LM sites to control noxious weed infestations; track the number of acres treated each year.

- Propose potential conservation reuses of LM sites to site managers and acquire funding to implement the reuse; track the number of sites proposed for reuse.
- Maintain the LMS Ecosystem Management Tracking Log, which tracks ecological improvements at LM sites; prepare a year-end summary report.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, LM will develop training and educational presentations concerning awareness of LM's ecosystem, watershed, and environmental management policies and processes as needed.

2.5.3 Response to additional SSP guidance questions

[a.] Because LM's 91 sites (approximately 62 of which are visited regularly) 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 local and regional planning efforts focus on the ecosystem, watershed, and environmental management.

[b.] LM executed three office leases in 2016 at its Westminster, Colorado; Fernald Preserve, Ohio; and Window Rock, Arizona, offices. During the leasing process, LM followed the guidance in the DOE *Real Estate Desk Guide* and the guidance in the GSA lease document. A Preliminary Real Estate Plan was drafted for all three leases, and LM consulted with GSA to determine if there was excess property near the locations of interest; however, no excess property was available at the time. LM did not consult with local communities, nor was future transportation infrastructure considered, because LM's priority and purpose for the offices was to locate them in close proximity to specific sites.

When needed, LM will develop new leases or extend existing leases in compliance with EO 13693, *Planning for Federal Sustainability in the Next Decade*. In its existing leases, LM will continue to look at the length of the lease to determine if facility enhancements, such as those associated with reducing energy consumption, can be made in an economical way. LM also will continue to assess the size of its organizational footprint and determine if it can be reduced.

[c.] LM ecologists collaborate with numerous universities, colleges, tribes, agencies, and individual scientists to conduct ecological research projects that support the LM mission. Examples of the scientific projects are summarized in Attachment E.

LM partnered with USFWS and the Cincinnati Zoo & Botanical Garden to develop a cooperative agreement for the American burying beetle's (*Nicrophorus americanus*) reintroduction at the Fernald Preserve in 2013; over 120 pairs of the beetle were introduced to the site. This was the fourth year of the 5-year cooperative agreement with USFWS and the Cincinnati Zoo & Botanical Garden to reintroduce the federally endangered species onto the site.

As part of its Uranium Leasing Program, LM regularly coordinates noxious weed control efforts with local counties, BLM personnel, and uranium lease tract lessees to jointly treat weed-infested areas. In April and September 2016, LM met with several of its partners to treat state-listed noxious weeds on and near three uranium lease tracts.

In February 2016, LMS staff met with members of the Medicine Bow Conservation District to discuss a collaborative effort among the conservation district, LM, BLM, an LM grazing lessee, a uranium mining company, and the Wyoming Department of Environmental Quality to study the effects of grazing on post-reclaimed mined lands in south-central Wyoming, including LM's Shirley Basin South, Wyoming, Disposal Site. Results of the study will help guide development of grazing management plans in the area.

From October 6 through 8, 2015, two project officers with the Canadian Nuclear Safety Commission visited the LM office in Grand Junction for site tours. LM provided tours of the former Grand Junction processing site, active disposal site, and vicinity properties to share requirements and lessons learned that will assist with plans for similar efforts at Port Hope, in Ontario, Canada.

In May 2016, an LMS scientist traveled to Madrid, Spain, to give a keynote presentation at the International Atomic Energy Agency (IAEA) International Conference on Advancing the Global Implementation of Decommissioning and Environmental Remediation Programmes. The presentation was a synopsis of ecological engineering remedies that LM is evaluating at former uranium processing sites in the southwestern United States.

In June 2016, Brazilian scientists with IAEA visited the LM office in Grand Junction, the Weldon Spring site, and Westminster office. LM scientists gave presentations and conducted tours of LM's Grand Junction and Monticello disposal sites, the Weldon Spring site, and the Rocky Flats site.

From September 26 through 29, 2016, LM provided three presentations at an IAEA meeting in Grand Junction. In total, 26 technical talks were given to over 40 IAEA participants from 13 countries and the Uranium Mining and Remediation Exchange Group.

As part of its Uranium Leasing Program, LM regularly coordinates noxious weed control efforts with local counties, BLM personnel, and uranium lease tract lessees to jointly treat weed-infested areas. In April and September 2016, LM met with several of its partners to treat state-listed noxious weeds on and near three uranium lease tracts.

[d.] Respective sections of this document explain (1) regional transportation planning and ecosystem, watershed, and environmental management initiatives affecting sites (Sections 2.5.1 b., 2.5.2 a., and 12); (2) opportunities to work with local authorities to align energy policies (Section 2.1); (3) siting of renewable energy infrastructure (Section 3); and (4) climate preparedness (Section 10).

[e.] The dispersion of the legacy sites and activities that will be supported from that facility will be considered when choosing locations for new facilities or leased locations. As such, the facilities may be in central cities, rural communities, and existing or planned town centers. Regardless of the setting, LM will place a priority on identifying locations that are pedestrian friendly, near existing employment centers, or accessible to public transit.

2.6 Net-Zero Buildings

2.6a Existing Buildings: Energy, Waste or Water Net-Zero

One percent of the site's existing buildings above 5000 GSF are anticipated to be energy, waste, or water net-zero buildings by 2025.

2.6a.1 Performance Status

This is a newly identified goal, there was no 2016 target to meet; thus, performance related to this goal is limited.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Energy Use	Facilities — Energy, Renewables, Metering and Benchmarking	Yes	Yes	CTS LM internal tracking documents
Water Use	Facilities — Water, Metering and Benchmarking	Yes	Yes	CTS LM internal tracking documents

Abbreviations:
FIMS = Facilities Information Management System
CTS = Compliance Tracking System

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

As a best management practice, two Sustainable Buildings team members attended ASHRAE's "Making Net Zero Positive" cost-free webinar, earning three continuing education hours each**.**

As another best management practice, the LM EMS coordinator attended the Energy Exchange, which included modules on GPs.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

2.6a.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

In 2017, DOE will develop a database of best practices and tools that will help its building designs achieve net-zero energy water or waste status by 2030.

Using DOE tools when available, LM will assess and prioritize existing buildings larger than 5000 GSF for potential to become net-zero buildings. The expected impact of this activity is to identify which buildings have the potential to become energy, water, or waste net-zero buildings and begin developing proposals for funding considerations.

b. Expected site contribution to the DOE goal(s)

LM expects to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

Additional funding requests, if any, will be evaluated once interim targets are established.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Evaluate definitions and criteria for net-zero buildings.
- Update the Sustainable Buildings section in the EMS Sustainability Teams Manual to include EO 13693 requirements and net-zero implementation actions.
- Broaden Sustainable Buildings team member's knowledge base of the 2016 GPs, climate-resilient design and management, net-zero buildings, and Energy Star Portfolio Manager through online training and webinars.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, attend net-zero training when available and cost effective.

2.6a.3 Response to additional SSP guidance questions

[a.] Using information from energy and water evaluations, Energy Star Portfolio Manager, and documentation on buildings that have undergone recent sustainable improvements, the Sustainable Buildings team will work in conjunction with LM's other sustainability teams

to identify and prioritize which existing buildings could be moved forward toward net-zero energy, waste, or water status.

2.6b New Buildings: Energy Net-Zero and Waste, or Water Net-Zero

All new buildings (larger than 5000 GSF) entering the planning process will be designed to achieve energy net-zero beginning in 2020.

2.6b.1 Performance Status

This is a newly identified goal, there was no 2016 target to meet; thus, performance related to this goal is limited.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

None.

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

None.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

2.6b.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

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

b. Expected site contribution to the DOE goal(s)

LM has no new building construction entering the planning process in 2020 or thereafter, so LM is not expecting to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Evaluate definitions and criteria for net-zero buildings.
- Update the Sustainable Buildings section in the EMS Sustainability Teams Manual to include EO 13693 requirements and net-zero implementation actions.
- Sustainable Buildings team members will broaden their knowledge base of the 2016 GPs, climate-resilient design and management, net-zero buildings, and Energy Star Portfolio Manager through online training and webinars.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, attend net-zero training when available and cost effective.

2.6b.3 Response to additional SSP guidance questions

[a.] LM has no building entering the planning process in 2020. If LM enters the planning process in 2020 or thereafter, LM will design buildings greater than 5000 GSF to achieve energy net-zero and water or waste net-zero status, where feasible.

3 Clean and Renewable Energy

3.1 Renewable Energy – Total Electric and Thermal 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 10% in 2016–2017, working toward 25% by 2025.

3.1.1 Performance Status

LM exceeded the 2016 target.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
On-Site Renewable Energy	Reports — Comprehensive Scorecard Data QA/QC: Facilities — Renewables	Yes	No	LM internal tracking documents
Purchased Green Energy	Reports — Comprehensive Scorecard Data — Green Energy Purchase	No	No	LM internal tracking documents
Renewable Energy Certificates	Reports — Comprehensive Scorecard Data — Renewable Energy Credit Only Purchased	No	No	LM internal tracking documents

Abbreviations:
FIMS = Facilities Information Management System
QA/QC = quality assurance/ quality control

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM successfully exceeded the interim clean energy target; 42% of LM's total energy came from clean energy sources.

As a best management practice, LM updated the 2009 renewable energy (RE) feasibility evaluations on selected LM sites in 2016. This study provided information such as available solar, wind, and geothermal resources that can be expected at each site and a summary of energy use and installed renewable and clean energy sources at each site.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

3.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

With the following activities, LM expects to continue meeting renewable and clean energy goals:

- Research additional renewable and clean energy installation at LM sites.
- Purchase additional green energy to continue progress toward meeting the 2025 goal.
- Investigate new renewable energy options to make certain that the RE claimed was generated at either federal or tribal facilities or non-federal or non-tribal facilities that are 10 years old or less, to comply with EO 13693. Specifically, review all LM RE generators, determine their ages, and land ownership status.
- Pursue the purchase of national RECs. These national RECs will provide reporting information such as age of the facility providing the RECs, type of energy source, and validity of the RECs.

b. Expected site contribution to the DOE goal(s)

LM is currently exceeding this DOE goal. LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Improve integration of LM's Energy team planning and implementation of actions with the site project planning teams to collaborate with them in achieving sustainability goals. In addition, increase communication of sustainability goals to all personnel.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

3.1.3 Response to additional SSP guidance questions

[a.] LM revised the RE feasibility studies completed in 2009 and updated information on the feasibility of installing RE generation and alternative thermal generation capability at its sites. LM will research installation of additional renewable and clean energy sources at LM sites or purchase additional RECs to continue meeting the 2025 goal.

[b.] No RECs from onsite renewable sources were sold.

[c.] As stated above, the 2009 RE feasibility studies were revisited to determine where new RE projects might be installed. No renewable or alternative energy evaluations of current installations were conducted in 2016. They will be included in future quadrennial site energy evaluations.

[d.] LM has purchased RECs at four sites. Locations and additional system information are shown in the chart below:

Site	RE [kWh/yr]	Costs [$/yr]	Type	Installation Year	Provider
Fernald Preserve	423,600	$4236.00	Solar photovoltaic	2012	Duke Energy
Grand Junction Disposal Site*	14,400	$360.00	Wind	2001	Grand Valley Power
Monticello Site	36,000	$36.72	Solar photovoltaic	2011	Empire Electric
Weldon Spring Site	48,000	$480.00	Solar photovoltaic	2012	Ameren Missouri

*The RECs purchased from Grand Valley Power have aged out and were not counted in 2016.

LM is pursuing the purchase of national RECs that will provide certification of the RECs plus the age and source of the RECs.

[e.] LM will incorporate the *DOE Procurement Policy Guidance on Purchase of Electricity, Energy Products and Energy By-Products from Indian Tribes* as the current sources for purchase of RECs age out. The possibility of purchasing from RE sources on Native American lands will be investigated. LM has 559 solar panels that generate 336 kW installed at the Tuba City site, which is on the Navajo Nation.

[f.] The Energy and Sustainable Buildings teams will work with other sustainability teams, engineers, and design professionals as part of an integrated team to ensure RE, especially solar hot water heaters (in accordance with EISA Section 523), is considered in new buildings, when cost effective.

3.2 Renewable Energy Total Agency Consumption

Renewable Electric Energy requires that renewable electric energy account for not less than 10% of a total agency electric consumption in 2016–2017, working toward 30% of total agency electric consumption by 2025.

3.2.1 Performance Status

LM exceeded the 2016 target.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
On-Site Renewable Energy	Reports — Comprehensive Scorecard Data QA/QC: Facilities — Renewables	Yes	No	LM Internal tracking documents
Purchased Green Energy	Reports — Comprehensive Scorecard Data — Green Energy Purchase	No	No	LM Internal tracking documents

Abbreviations:
FIMS = Facilities Information Management System
QA/QC = quality assurance/ quality control

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM exceeded the interim 2016 RE target. As shown in Figure 5, 44.7% of LM's electrical power came from renewable sources in 2016.

LM updated 2009 RE feasibility evaluations on selected LM sites. This provided up-to-date information on the status of the sites as to the feasibility of installing RE generation units.
As a best management practice, LM continues to generate RE onsite, and retain the RECs. Thus, LM is able to double those RECs.

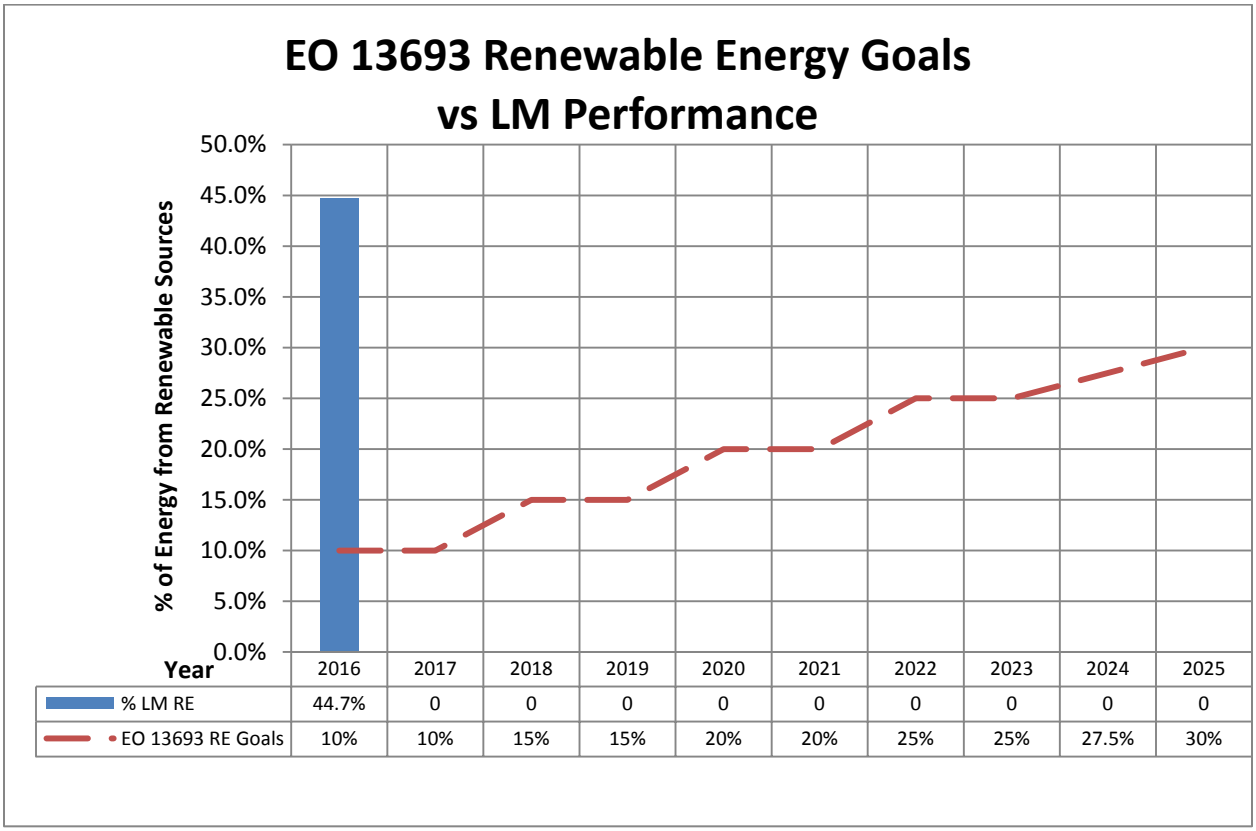


Figure 5. LM Performance vs Renewable Energy Targets

LM obtains 44.7% of its electrical energy from renewable sources, thus exceeding the interim RE target. One of the RE team's internal targets last year was to compare current LM RE produced onsite against the current inventory of RECs purchased. Additionally, LM investigated possible RE projects on LM sites that could replace the purchased RECs.

LM purchased electrical use has decreased 50% since 2008. The decrease in total electric use results in an increase of the percentage of electricity that comes from RE.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

3.2.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

With the following activities, LM expects to continue meeting RE and clean energy goals:

- Improve integration of LM's Energy team planning and implementation of actions with the site project planning teams to collaborate with them in achieving those goals. In addition, increase communication of sustainability goals to all personnel.

b. Expected site contribution to the DOE goal(s)

LM is currently exceeding this DOE goal. LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Review all LM RE sources and determine their ages to make certain that the RE claimed was generated at facilities less than 10 years old or on federal or tribal land to comply with EO 13693.
- Evaluate the continued purchase of RECs since LM expects to exceed the 2025 goals in EO 13693 for RE.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

3.2.3 Response to additional SSP guidance questions on Renewable Energy

[a. – e.] See Section 3.1.3.

4 Water Use Efficiency and Management

4.1 Potable Water Intensity Reduction Goal

Reduce potable water intensity (WI) (gallons [gal]/GSF) 36% by 2025 from a 2007 baseline (2016 target: 18%).

4.1.1 Performance Status

LM exceeded the 2016 potable WI target.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Goal 4.1 Potable Water Intensity	Facilities — Water	Yes	No	CTS LM internal tracking documents
Potable Water Use	Facilities — Water	Yes	No	CTS LM internal tracking documents
Facility Size (GSF)	Facilities — Goal Subject Facility	Yes	Yes	LM internal tracking documents

Abbreviations:
FIMS = Facilities Information Management System
CTS = Compliance Tracking System

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

The increase in LM's scope and number of sites between now and 2025 may affect LM's ability to achieve this goal. See Section 1.1.1.b for more detailed information.

In October 2015, the well water at the Tuba City site was tested and deemed potable. The metered water at the site was previously reported as ILA water but will be reported as potable from October 2015 forward. LM included the additional square footage of the buildings onsite to determine WI values for LM.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM accomplished the 2016 target. Table 3 shows LM's goal for subject sites' water use performance since 2007; LM reduced WI by 94.3%.

The LM Water Conservation team evaluated the Fernald Preserve and Monticello site in 2016. During the evaluations, staff assessed meters and looked for leaks. The final evaluation reports are still in progress.

As a best management practice, LM considers ways it can reduce, reuse, and recycle potable and ILA water with project-planning tools (e.g., Project/Activity Evaluation, Statement of Work). LM did not have any major, water-using projects in 2016; however, the Water Conservation team reviewed Statements of Work and Project/Activity Evaluations for opportunities to conserve water during projects.

Table 2. LM Combined-Sites Water Use Since 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**
2016 combined-sites potable-water WI = (306,402 ÷ 40,616) = 7.71						
2016 combined-sites percent potable-water WI Reduction: **= [(2007 WI – 2016 WI) ÷ 2007 WI] × 100%** **= [(136.20 – 7.71) ÷ 136.20] × 100%** **= 94.3% reduction**						
2016 combined-sites percent ILA reduction: **= [(2010 ILA – 2016 ILA) ÷ 2010 ILA] × 100%** **= [(503,336 – 5,500) ÷ 503,336] × 100%** **= 98.9% reduction**						

Notes:

[a] Table 4 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 LM Water Conservation team did not include that building's square footage in the combined-sites GSF for 2013; (that building's square footage was in the 2012 GSF).

[c] Sustainability Performance Office (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 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 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 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. 2016 is the first year Tuba City is included in potable water use totals.

Abbreviations:

ILA = industrial, landscaping, and agricultural
N/A = not applicable
WI = Water Intensity

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

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 the included Dashboard's GSF (see Attachment F, "Explanation of Differences on Reporting"). Therefore, the WI values in the Dashboard and this SSP are not the same. The values in Table 3 are LM's correct WI values. Table 4 illustrates WI values when using the square footages associated with the Dashboard and LM water use, respectively.

Table 3. Water Intensity Comparison Using LM Water Use and 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
2016	40,616	41,914	313,227	7.71	7.47	94.3% reduction	65.2% reduction

Notes:
[a] See Attachment H, "Sustainability Dashboard Comprehensive Scorecard"
Abbreviations:
N/A = not applicable
WI = Water Intensity
GSF=gross square feet

4.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will continue to track and monitor its potable water use for 2017 and beyond to identify opportunities where it can reduce its potable water consumption.

A new building will be constructed at the Weldon Spring site, with occupancy taking place in 2019. To the extent practicable, this building will comply with the revised GPs, which includes improvements in water efficiency.

b. Expected site contribution to the DOE goal(s)

LM is currently exceeding this DOE goal. LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to reduce WI to achieve a 20% reduction by the end of 2017, as compared to the 2007 baseline.
- Continue to investigate ways to reuse and recycle water. The LM Water Conservation team evaluated sites on a rotating basis so it will evaluate all sites at least once every 4 years in compliance with EISA Section 432. LM will evaluate its water use at the Grand Junction disposal site and Rifle, Colorado, Processing (Old) Site in 2017.
- Maintain, update as needed, and follow a water management plan described in the *Environmental Management Systems Sustainability Teams Manual*, Section 4.0, "Water Conservation Plan." (LMS/POL/S11374).

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

4.1.3 Response to additional SSP guidance questions on Potable Water

[a.] LM provided accurate 2016 data, as well as additional water supply details, per the "Sustainability Dashboard User Guide" instruction.

[b.] Major water consuming end-uses include sinks, toilets, drinking fountains, equipment used for decontamination and dust suppression, emergency eyewash and showers, and a pond supporting the ground source heat exchange system. LM did not calculate water balances in 2016. LM has not yet planned to analyze water balance in 2017, but will gather more information about how to meet the requirement.

[c.] During the water evaluation in December 2015, a leak was identified on a gate valve within the meter vault adjacent to the Interpretive Center at the Weldon Spring site. As soon as the leak was discovered, the meter vault was shut down and the leak was repaired. The leak was determined to have started in October 2015 and resulted in 8400 gal of potable water lost.

[d.] Refer to Section 4.1.2.a for future planned water efficiency projects.

[e.] With the exception of the Rifle processing site, LM measures its potable and ILA water use at all Goal Metrics sites with standard water meters. The Rifle site does not have a meter because LM does not use piped municipal water there, but rather delivered potable water. Consequently, LM determines its water use at the Rifle site by tracking delivery volume.

LM does not permanently occupy the Rifle site, and staff visits it infrequently; hence LM uses only a small amount of water there.

[f.] LM captures rainwater runoff from the Fernald Preserve Visitors Center roof in a rock channel that is sent to the onsite wetland. This reduces the amount of water that needs to be added to the wetland to keep vegetation alive during long periods of drought. LM will continue to evaluate future projects for the potential use of alternative water sources.

[g.] LM maintains and follows a water management plan found in the LMS *Environmental Management System Sustainability Teams Manual*, Section 4.0, "Water Conservation Plan," provided in Attachment C.

[h.] LM does not replenish water supplies.

[i.] In an effort to reduce water use in drought-affected areas, LM captures rainwater runoff from the Fernald Preserve Visitors Center roof in a rock channel that is sent to the onsite wetland. This reduces the amount of water that needs to be added to the wetland to keep vegetation alive during long periods of drought. In addition, LM uses project planning tools (Project/Activity Evaluations, Statements of Work) to help identify ways to reduce water use during planned projects. LM will continue to evaluate future projects for the potential use of alternative water sources.

4.2 Non-Potable Fresh Water ILA Use Reduction Goal

Reduce Industrial, Landscaping, and Agricultural (ILA) water consumption 30% by 2025 compared to the 2010 baseline (2016 target: 12%).

4.2.1 Performance Status

LM exceeded the 2016 target.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Goal 4.2 ILA Use	Facilities — Water	Yes	No	LM internal tracking documents

Abbreviations:
ILA = industrial, landscaping, and agricultural

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

The increase in LM's scope and number of sites between now and 2025 may affect LM's ability to achieve this goal. See Section 1.1.1.b for more detailed information.

In October 2015, the water at the Tuba City site was tested and deemed potable. LM will report the metered water at the site previously reported as ILA water as potable from October 2015 forward.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM accomplished meeting the 2016 target to reduce use 12% at all LM goal subject sites. As shown in Table 3 in Section 4.1.1 LM reduced its ILA water use by 98.9% compared to the baseline year of 2010.

LM captures rainwater runoff from the Fernald Preserve Visitors Center roof in a rock channel that is sent to the onsite wetland. This reduces the amount of water that needs to be added to the wetland to keep vegetation alive during long periods of drought.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

4.2.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will continue to track and monitor its ILA water use, evaluate future projects for the potential to use alternative water sources, and identify opportunities to reduce its ILA water use. LM expects minimal impact from planned 2017 activities.

b. Expected site contribution to the DOE goal(s)

LM is currently exceeding this DOE goal. LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to reduce ILA water use to achieve a 16% reduction by the end of 2018, as compared to the 2010 baseline.
- Continue to reduce ILA water use to achieve a 20% reduction by the end of 2020, as compared to the 2010 baseline.

- Implement ILA water efficiency improvements as opportunities and funding become available.
- Continue to use low-water-use landscaping technologies and practices, such as xeriscaping recently done at the Grand Junction site. Investigate additional alternative water sources to offset the use of ILA water and help achieve ILA water use reduction goals.
- Continue to evaluate water use at goal subject sites in accordance with EISA Section 432. LM will evaluate sites on a rotating basis so it evaluates each site every 4 years.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

4.2.3 Response to additional SSP guidance questions on ILA Water

[a.] Current ILA water use includes watering vegetation with ILA water at the Fernald Preserve; the ILA water supply source for this use was an onsite well.

[b.] LM's efforts to measure and reduce ILA water are listed below:

[i.] LM did not install ILA water-efficient equipment or implement ILA water best practices in 2016.

[ii.] LM's ILA water use is minimal. When evaluating LM sites that use ILA water, the Water Conservation team will try to identify alternative ILA water sources.

[iii.] LM has not planned to use or install any ILA water-efficient equipment in 2017.

[c.] LM has adopted and incorporated federal management practices, such as landscape management, using storm water runoff, siting for facilities, and identifying unnecessary real property for disposal.

5 Fleet Management

5.1 Fleet-wide per-mile Greenhouse Gas Emissions Reduction

Reduce fleet-wide per-mile GHG emissions 30% by 2025 from a 2014 baseline (2016 target: 3%; 2017 target: 4%).

5.1.1 Performance Status

LM has met the 2016 target. In 2016, LM reported 610.0 (gCO2e/mile) for a reduction of 3%. LM's Fleet GHG emissions baseline for 2014 is 629 (gCO2e/mile).

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Fleet Greenhouse Gas Emissions	Comprehensive Scorecard	No	No	No

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

This is a new requirement based on EO 13693. GSA provides a limited selection of low-GHG-emitting vehicles in the class that is needed by LM to achieve its 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 E85 alternative fuel vehicles (AFVs) as alternatives when (1) low-GHG-emitting vehicles are not available or insufficient for the intended use and (2) when E85 is available and does not provide an increased unnecessary cost.

The increase in LM's scope and number of sites between now and 2025 may affect LM's ability to achieve this goal. See Section 1.1.1.b for more detailed information.

The DRUM program is planning to increase fleet size by no less than four new conventionally fueled vehicles, which will increase GHG emissions for the fleet. Many of the abandoned uranium mines are in remote areas without cellular service, and where roads are not maintained to a condition suitable for a typical highway vehicle. There are no low-GHG-emitting vehicles that would suffice for the mission needs of the program.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

In 2016, LM acquired one low-GHG-emitting vehicle with three notable lessons learned in relation to performing the work of LM:

1. The vehicle comes with all-wheel drive, which is not the same as 4-wheel drive. The LM sites are often accessed via off-road rough terrain with obstacles that require a 4-wheel drive-train. All-wheel drive trains wear out brakes quicker, resulting in brake fade, and do not have the gearing to ease the vehicle over larger obstacles.
2. The vehicle lacks a spare tire. For original equipment manufacturers to meet efficiency standards, they have resorted to reducing the weight of vehicles by replacing spare tires with fix-a-flat systems. In an off-road scenario, this can be dangerous and rarely can the type of tire damage caused by this environment be solved by a fix-a-flat system.
3. The vehicle lacks engine power for hauling a trailer or climbing steep mountain access roads.

All of these issues are risks that can potentially increase costs, negatively impact safety, and prevent LM from adequately providing the equipment necessary to accomplish the mission. Depending on the intended use and if the vehicle is placed in a fleet pool, it is imperative that the vehicles acquired are able to meet the minimal requirements and are versatile enough to accomplish the predominant type of work performed at LM sites. As the number of sites and work scope LM supports increases, the anticipation is that low-GHG-emitting vehicles will become a substantially less-ideal solution.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

5.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will continue to evaluate low-GHG-emitting vehicles to replace any vehicle in LM's current fleet as a first option depending on the intended use (as discussed in the previous section). LM's secondary approach will be to obtain E85-capable flex-fuel vehicles when low-GHG-emitting vehicles are not available or not appropriate for supporting the LM sustainability goals and when E85 fueling infrastructure is available and there are no additional costs incurred. LM's policy of acquiring low-GHG-emitting vehicles and E85-capable vehicles will reduce the agency-wide per-mile GHG emissions "at the tailpipe."

LM will strive to establish efficiencies and improve its processes whenever possible and in the best interest of the federal government for management of its assets. LM will evaluate possible solutions involved in vehicle-idling practices. LM will use this data to identify any opportunities to improve LM's processes and reduce the amount of idling time for LM vehicles, which could further reduce GHG emissions and extend the overall useful life of the vehicle assets.

b. Expected site contribution to the DOE goal(s)

LM expects to contribute to meeting meet this DOE goal for the near future, but is not expecting to contribute to meeting this DOE goal annually due to increasing growth in the number of sites that LM supports.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Look for opportunities to trade in LM vehicles for smaller, more appropriate low-GHG-emitting vehicles that can help rightsize LM's fleet and increase progress toward LM's low-GHG sustainability goals.
- Communicate to employees the need to fuel vehicles with alternative fuels when possible and while operating alternative-fuel capable vehicles.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, the Vehicle and Fuel Use team is planning a fleet refresher training that will cover alternative fuel use, fleet tools, and sustainability goals. This training may be in the form of a site presentation, communication email, articles, or a formalized training.

5.1.3 Response to additional SSP guidance questions on Fleet-wide greenhouse gas emissions

[a.] In compliance with CEQ Implementing Instructions for EO 13693, LM's 2014 baseline fleet-wide per-mile GHG emissions as identified in Federal Automotive Statistical Tool (FAST) is 629 grams of CO2 equivalent per mile.

[b.] This goal will be increasingly difficult to achieve in future years based on LM's mission and the types of sites that LM supports. Most of the sites are located in remote areas that require 4-wheel drive low-gearing capability. As such, most standard late model and future SUVs will be only capable of all-wheel drive technology and will no longer offer the 4-wheel low gearing as an option. The bigger SUVs and pickup trucks will continue to have 4-wheel low options for the time being, but these vehicles are rarely available as an option in a low-GHG-emitting vehicle. Electric, hybrid, and sedan-type vehicles are not conducive to accomplishing LM's mission due to elongated engine-on times, remote site locations, unmaintained mountainous roads, road obstacles that require additional clearance than these types of vehicles are able to provide, and severe weather that could impact the safety of LM's fleet users.

5.2 Reduce Departmental Fleet Petroleum Use by 2 Percent Annually

Reduce fleet petroleum consumption 20% by 2015, and each year thereafter, relative to a 2005 baseline (2016 target: 22%).

5.2.1 Performance Status

LM achieved a 12.8% reduction and did not meet the 2016 target when using the reported 2005 baseline. However, LM has identified a more accurate 2005 baseline value for conventional

petroleum usage in regards to this goal (see Attachment F, "Explanation of Differences on Reporting"). The accurate and accepted 2005 baseline is 31,488 gal of conventional petroleum fuel consumed (see Table 5), which results in a calculated 25.3% decrease in conventional petroleum fuel consumption for 2016 compared to the 2005 baseline. Based on this methodology LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Petroleum Consumption Reduction	Vehicles and Equipment — Fleet Vehicles Fuel	No	No	Internal tracking documents
Conventional Fuel Use	Vehicles and Equipment — Fleet Vehicles Fuel	No	No	FAST Internal tracking documents

Abbreviations:
FAST = Federal Automotive Statistical Tool

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

As more sites move into post-closure and legacy management, LM's number of sites will grow to approximately 121 by 2025 and associated use of vehicles will continue to increase, making it difficult for LM to meet the future reduction goal. Additionally, the lack of alternative fueling infrastructure near these sites makes it increasingly difficult to address reduction of conventional fuels. See Section 1.1.1.b for more detailed information.

Many of LM's sites are not located near an alternative fueling station or located within a 5-mile radius or within 15 minutes travel time from the garaging location, which affects the ability to purchase alternative fuel.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM's petroleum fuel use in 2016 indicates a 4.8% annual decrease in consumption compared to 2015. Using the 2005 LM-reported baseline from the 2016 Dashboard of 27,213 gal, a 13.5% decrease in consumption since the baseline year of 2005 is indicated (see Attachment F, "Explanation of Differences on Reporting").

As a best management practice, LM calculates normalized values for conventional fuel use based on the number of sites supported as listed in the LM *Site Management Guide* (Blue Book) to determine the effects of LM's expanding mission and to more accurately represent LM's fuel use. For the normalized evaluation, the fuel consumption, in gallons, is divided by the number of LM sites in the current year. Based on the normalized values, LM's petroleum fuel use in 2016 indicates a 45.0% decrease in consumption since the baseline year of 2005. A comparison of the petroleum fuel consumption changes using both data sets are shown in Table 5.

The petroleum reduction figures do not appear to match up to the Sustainability Dashboard's comprehensive scorecard report because the scorecard looks at Gallons of Gasoline Equivalents instead of Natural Units. LM report its data in SSP based on Natural Units.

Table 4. LM Petroleum Fuel Use

Data Set	Baseline–2005 (gallons [gal])	2015 (gallons)	2016 (gallons)	Annual % Change	Total % Change
Using LM Baseline*	31,488	24,721.24	23,535.78	-4.8%	-25.3%
Normalization of data to reflect increase of mission					
Number of LM Sites	67	90	91	1.1%	35.8%
Fuel Use/Site (gal)	470.0	274.68	258.63	-5.8%	-45.0%

***** The Dashboard reported LM 2005 baseline values as 27,213 gal of conventional petroleum and 4275 gal of E85 fuel. This occurred because, for all E85-capable vehicles in 2005, 100% of fuel was reported as E85 fuel. However, E85 fueling infrastructure was not in place in 2005, and all reported E85 was actually conventional petroleum fuel. The new correct 2005 baseline amount for conventional petroleum fuel consumption is 31,488 gal (i.e., 27,213 + 4275).

LM best management practice methods of reducing conventional fuel use while including newly acquired sites as LM's support scope increases include acquiring more E85-capable vehicles, tracking and updating E85 station location lists for vehicle users, and promoting ride-sharing, trip consolidation, and videoconferencing whenever possible. In addition, LM uses virtual-presence meeting software to reduce both business travel, conventional fuel use, and their associated GHG emissions.

Another LM best management practice is to replace all light-duty vehicles with AFVs depending on the intended use of the vehicle at the time of replacement. LM considers low-GHG-emitting vehicles as AFVs even when fueled with gasoline and is the first choice for acquisitions. The availability of E85-capable vehicles will provide LM with more opportunities to use E85 fuel and reduce the use of conventional fuel. However, some LM locations do not have E85 fueling infrastructures available nearby to accommodate an E85-capable vehicle. For these locations, LM evaluates low-GHG dedicated gasoline vehicles to see if they can save additional costs incurred by the government for fueling capabilities that are not available at or near the garaging location.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

LM has identified a more accurate 2005 baseline value for conventional petroleum usage in regards to this goal (see Attachment F, "Explanation of Differences on Reporting"). The accurate and accepted 2005 baseline is 31,488 gal of conventional petroleum fuel consumed (see Table 5), which results in a calculated 25.3% decrease in conventional petroleum fuel consumption for 2016 compared to the 2005 baseline. Based on this methodology LM met the 2016 target.

5.2.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

Planned activities and their associated expected impact are in the *Fleet Management Plan* (see Attachment D).

b. Expected site contribution to the DOE goal(s)

LM exceeded the 2016 interim target but is not expecting to contribute to meeting this DOE goal annually due to increasing growth in the number of LM sites that LM supports.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to maintain a list of vehicles, monitor the monthly fuel consumption, monitor vehicle and fuel type, and take appropriate action to meet sustainability goals for vehicle and fuel use whenever possible.
- Increase the overall fuel economy of the fleet by continually working with GSA to acquire smaller, more efficient, and rightsized vehicles and other advanced-technology vehicles.
- Identify the most fuel-efficient vehicle for a given task by taking into account miles driven, fuel used, vehicle use, and road types traversed, such as off-road rocky conditions.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

5.2.3 Response to additional SSP guidance questions on Petroleum Use

[a.] LM is continuing to promote programs that will lower LM's dependence on oil, such as trip consolidation and videoconferencing capabilities. LM's success is constricted by a lack of fueling infrastructures near the sites that LM supports, and the restrictive verbiage that impacts LM's EPAct 2005 Section 701 waiver approvals. The waiver policy language states that if E85 infrastructure is located within a 5-mile radius of the garaging location, then a waiver from having to fuel with E85 will not be allowed. Often times, LM's sites and the locations where LM garages its fleet are far from one another, with limited available E85 infrastructure. As an example, Grand Junction has two E85 fueling stations within a 5-mile radius of the garaging location. However, a majority of sites that are supported out of the Grand Junction location require overnight travel and fueling at stations that do not have E85 infrastructure available. LM has not been granted waivers for the Grand Junction fleet of vehicles. As a way to address this, the Vehicle and Fuel Use team continues to promote the use of www.AFDC.energy.gov and the associated apps available on Google's Android and Apple's iOS through its fleet lunch-and-learn presentation and periodic communications. The Vehicle and Fuel Use team will continue to promote the need for fueling with E85 even when waived through the EPAct 2005 Section 701 waiver process. LM placed maps in all Westminster vehicle books with verbiage indicating that E85 is still a requirement during non-peak traffic times even though their fleet is waived from this requirement due to travel time to the station during rush hour.

The Vehicle and Fuel Use team promotes ride sharing, video teleconferencing capabilities, and anti-idling, and coordinates efforts to right-size and right-type vehicles for the work being done. Petroleum consumption is reduced when we reduce the size of the vehicle and ensure the correct type of vehicle is used to achieve the mission.

In 2016, LM updated the Vehicle Allocation Methodology, disposed of a DOE-owned GeoProbe, and replaced a 1-ton pickup truck with a ½-ton pickup truck. By rightsizing and right-typing our fleet, we can expect lower conventional fuel use and increased utilization with smaller vehicles that are more fuel efficient.

LM uses Verizon Network Fleet telematics to look at vehicle fuel efficiencies. However, there is a hurdle with obtaining fuel efficiency information for Dodge vehicles since they don't have the sensor required to report any fuel mileage efficiencies to Network Fleet.

5.3 Increase Alternative Fuel Use by 10 Percent Year-Over-Year

Increase annual alternative fuel consumption 10% from a 2005 baseline
(2016 target: 110%)

5.3.1 Performance Status

LM met the 2016 target.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Scope 1 GHG Mobile Emissions	Reports — Performance Graphs	No	No	FAST
GHG Emissions Summary	Reports — Performance Graphs	No	No	No
Alternative Fuel Use	Vehicles and Equipment — Fleet Vehicles Fuel	No	No	FAST LM Internal tracking documents
E85 Fuel Stations	No	No	No	DOE's Energy Efficiency and Renewable Energy website

Abbreviations:
FAST = Federal Automotive Statistical Tool

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM has consistently exceeded the annual goal of a 10% increase in alternative fuel consumption. Using a baseline of one gal of E85 in 2005, our annual increase in alternative fuel is 185,739%. E85 consumption for 2016 was 1858 gal.

As a best management practice, LM has incorporated reminders to fuel with E85 in its routine communications and has worked toward introducing a refresher training that includes requirements to fuel with alternative fuels.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year, in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office].

LM believes that the FAST data for the E85 baseline is an overestimate when compared to LM tracking data (see Section 5.3.1.d, "E85 Fuel Usage," of Attachment F, "Explanation of Differences on Reporting").

5.3.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will continue to track the locations of E85 stations relative to the work performed as part of LM's mission. Additionally, LM Fleet Management will continue to incorporate reminders to fuel with E85 in its routine communications. See Attachment D, *Fleet Management Plan*.

b. Expected site contribution to the DOE goal(s)

LM exceeded the 2016 target. LM expects to continue to contribute to meeting the DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Submit needed AFV waivers where E85 fueling stations are unavailable, more expensive than conventional fuel, or located further than is feasible, in accordance with the EPAct Section 701 process.
- Continue tracking E85 fuel use by each vehicle for reporting purposes.
- Continue to monitor DOE's Energy Efficiency and Renewable Energy website to determine E85 fuel infrastructure availability by garaging location.
- Continue to place maps and station listings showing E85 fuel stations in all E85-fuel-capable vehicle black books for easy reference by drivers.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

5.3.3 Response to additional SSP guidance questions on Alternative Fuel Use

[a.] E85 alternative fuel, which is the predominant alternative fuel used by LM, is slowly diminishing in popularity and infrastructure. Since not being a highly efficient fuel for consumers, there is not a high demand or incentive for stations to provide this fuel or provide accuracy in reporting its use on LM's fuel receipts. LM has found that receipts sometimes indicate gasoline was purchased, when the fuel used was E85. This

misidentification skews the data. LM has a policy and target to acquire 75% of light duty vehicles as AFVs, with the first acquisition method being low-GHG-emitting vehicles and then E85-capable vehicles. LM evaluates the need to meet LM's AFV requirements with the infrastructure availability and added cost associated with the AFV through cost benefit analysis. The Alternative Fuels Data Center webpage at www.afdc.energy.gov is a useful tool that LM uses to identify alternative fueling infrastructure near locations or routes where LM operates. The Vehicle and Fuel Use team continues to encourage use of E85 for vehicles that are capable to operate on E85. The Westminster office is waived from the requirement to fuel with E85 due to the travel time during rush hour. LM has placed E85 station maps with verbiage indicating the requirement to fuel up with E85 during no- rush hour times in Westminster vehicle books. Additionally, the Vehicle and Fuel Use team will continue to promote the www.afdc.energy.gov alternative fuel locator website and Apple's iOS and Android apps that assist with identifying locations for alternative fuels.

5.4 AFV Purchases

Seventy-five percent of light-duty vehicle acquisitions must consist of AFVs (2016 target: 75%).

5.4.1 Performance Status

LM did not meet this target.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Alternative-Fuel Vehicles	Vehicles and Equipment — Fleet Vehicles Inventory	No	No	FAST LM Internal tracking documents

Abbreviations:
FAST = Federal Automotive Statistical Tool

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM's light-duty fleet consists of 91% AFVs. A gasoline-dedicated low-GHG-emitting vehicle is considered an AFV when using conventional gasoline fuel. In 2016, 66% of LM's light-duty vehicle acquisitions were AFVs.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

5.4.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM's current 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 mission. Some locations do not have E85 fueling infrastructures available to accommodate an E85-fueled vehicle. As such, it would not be cost-effective for LM to lease E85 vehicles at an added incurred monthly cost to the government. See the *Fleet Management Plan* (Attachment D). LM's first approach will be to always acquire low-GHG-emitting vehicles (which are considered AFV even if operated with conventional gasoline) when available and practical. These are ongoing planned activities that were implemented previously and continue to be an effective strategy for meeting LM's AFV acquisition goals.

b. Expected site contribution to the DOE goal(s)

LM is not expected to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- The Vehicle and Fuel Use team will continue to record and track vehicle-related data and produce monthly and quarterly summary reports that include information regarding AFVs.
- In addition, data in the FAST report will continue to project a 3-year vehicle acquisition forecast that will include AFV acquisitions for all light-duty vehicles when possible, depending on alternate fuel availability, and when LM mission allows.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

5.4.3 Response to additional SSP guidance questions on light-duty vehicle acquisitions

[a.] LM's policy is to acquire low-GHG-emitting, E85, or other AFVs when replacing light-duty vehicles in LM's fleet. LM will continue to evaluate this goal for all of LM's applicable light-duty fleet, but will focus on acquiring low-GHG-emitting vehicles as the preferred option, with E85 flex-fuel vehicles being secondary.

[b.] Due to the lack of biofuel availability around the sites supported by LM, biodiesel is not a significant contributor of alternative fuels for the LM program. Additionally, LM's small amount of diesel-capable vehicles makes it extremely costly to provide onsite infrastructure for biodiesel. LM does not have any plans for making biodiesel a strong competitor to other alternative fuels.

[c.] Alternative-fuel vehicles will not be acquired if it is not in the best interest of the U.S. Government and its taxpayers. LM maintains a balance of focus between mission accomplishment and fiscal responsibility. LM will always first try to obtain low-GHG-emitting vehicles, which are considered AFVs even if fueled with conventional gas.

5.5 Zero-Emission or Plug-In Hybrid Vehicles

Ensure 20% of passenger vehicle acquisitions consist of zero-emission or plug-in hybrid electric vehicles by 2025 (2016 target: 4%).

5.5.1 Performance Status

LM met the 2016 target as LM doesn't have any passenger vehicles.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Zero-Emission Vehicles	No	No	No	FAST
Plug-In Hybrid Vehicles	No	No	No	FAST

Abbreviations:
FAST = Federal Automotive Statistical Tool

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

The increase in LM's scope and number of sites between now and 2025 may affect LM's ability to achieve this goal. See Section 1.1.1.b for more detailed information.

In addition to information provided in Section 1.1.1.b, 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 users from weather hazards. Examples of these protections are using the GSA vehicles to keep employees warm or cool while performing their work. Keeping the air conditioning and heater running at an idle, even for short periods of time, can drain batteries in an electric or hybrid vehicle. A majority of sites LM supports do not have vehicle plug-in stations. As such, hybrid or plug-in technology is not conducive to LM activities and current infrastructure.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM has three low-speed electric vehicles to help support its mission. Low-speed electric vehicles provide LM with credit toward zero-emission electric vehicle goals.

The LMS Fleet Manager attended the 2016 Energy Exchange in Providence, Rhode Island, with attendance primarily in the fleet track educational sessions.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating, and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

5.5.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will evaluate the acquisition of charging infrastructure and zero-emission vehicles when LM's mission allows for passenger carriers.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Evaluate the need for passenger vehicles on an annual basis to determine if there is an opportunity to acquire electric or hybrid vehicles.
- Annually evaluate the need and cost effectiveness of providing onsite charging infrastructure for electric or hybrid passenger vehicles for fleet and personal use as allowed by DOE.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

5.5.3 Response to additional SSP guidance questions on zero-emission or plug-in hybrid electric vehicle acquisitions

[a.] As plug-in or hybrid vehicles are not conducive to accomplishing the LM mission, LM will not be acquiring plug-in or hybrid vehicles at this time. The mission of LM is to monitor post-cleanup sites for public health and safety. This work requires a large amount of time in the field away from electrical or environmental infrastructure. The large extent of engine-on time and the need for climate control prevents this vehicle technology from being useful for LM. This goal is for passenger vehicles only, and the LM fleet does not include any passenger vehicles.

[b.] Due to the lack of passenger vehicles in LM's fleet and the lack of personal electric vehicles owned by LM and contractors employees, pursuing onsite charging infrastructure would not be in the best interest of the taxpayer and LM at this time. When LM has a demand for passenger vehicles or when its employees or contractors have a greater need, then LM can further evaluate the need for a charging infrastructure.

6 Sustainable Acquisition

6.1 Procurements Meet Requirements by Including Necessary Provisions and Clauses (Sustainable Procurements/Biobased Procurements)

Meet contract actions requirements by including BioPreferred and biobased provisions and clauses in 95% of applicable contracts.

6.1.1 Performance Status

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
New Contract Actions	Acquisition and Procurement — Sustainable Contract Review	No	No	LM JAMIS Data Warehouse
Electronic Purchases	Electronic Stewardship and Data Centers — Electronics Acquisition	No	No	FedCenter — GreenBuy Award submittal process

Abbreviation:
JAMIS = Job Cost Accounting Management Information System

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

In 2016, 100% of new contract actions, under new and existing contracts, included requirements for products and services to (1) be energy efficient (Energy Star or FEMP-designated), water efficient, 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 Dashboard.

In 2016, 99% of products and services purchased by LM were sustainable (where recycled and biobased products are identified as available by the U.S. Department of Agriculture and EPA).

The Rocky Flats site identified and used a biobased dust suppressant (Durablend) that worked well.

The following best management practices ensure appropriate language is included and help ensure sustainable products are purchased:

- The LMS Contractor Subcontract Terms and Conditions for services, construction, and commodities products contain the sustainable acquisition language and require reporting of sustainable products for each subcontract where sustainable products are used.
- The current procurement process allows for review by a subject matter expert to identify applicable sustainable acquisition requirements.
- The purchasing group issued an email notice providing changes to mandatory biobased products list to credit card holders.

- The bulk data for products and services is 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 (O&M) department has 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.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

6.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

The Sustainable Acquisition team will continue to 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. LM is meeting sustainable acquisition goals and plans to continue meeting these goals.

The LMS contractor Terms and Conditions for all commodities and services will continue to include the required language that products and services be green or sustainable.

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 the following:

- Energy efficient
- Water efficient
- Biobased
- Environmentally preferable
- Non-ozone-depleting chemicals or other alternatives to ozone-depleting substances and high-global-warming potential hydrofluorocarbons
- Recycled content, including paper containing 30% post-consumer fiber
- Non-toxic or less-toxic alternative products
- Fuel-efficient products and services

LM will continue to ensure that 95% of EPA and U.S. Department of Agriculture–listed products and services purchased, but excluding all credit card purchases, are environmentally preferable or sustainable in accordance with EO 13693 and as subject to certain qualifications.

The expected impact of the planned activities is to continue to meet or exceed the DOE goal.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- 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 and in the Dashboard).
- Continue to strengthen the requirement for federally mandated, designated products in all procurement actions as necessary.
- Continue to require that purchases of noncompliant energy-efficient products have written preapproval from a subject matter expert.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

6.1.3 Response to additional SSP guidance questions on sustainable acquisitions

[a.] In an effort to reach 100% compliance for biobased and construction contracts by 2020, all new solicitations and contracts contain requirements for products and services to (1) be energy efficient (Energy Star or FEMP-designated), water efficient, biobased, environmentally preferable (including EPEAT-registered products), non-ozone-depleting, and nontoxic or less toxic; and (2) contain recycled content.

[b.] The current LM affirmative procurement plans, policies, and programs ensure that all federally mandated designated products (e.g., BioPreferred or biobased) and services are included in all relevant acquisitions.

[c.] LM does not purchase any commodity in large enough quantity to pursue monitoring or improving GHG-emissions management in the supply chain.

[d.] LM strives to achieve 100% compliance for acquisition of sustainable products. The Sustainable Acquisition webpage on the LM Intranet contains links that help employees locate EPA recommendations for environmentally preferable specifications, products, and product vendors and service providers that meet green standards.

7 Pollution Prevention and Waste Minimization

7.1 Non-Hazardous Municipal Solid Waste

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

7.1.1 Performance Status

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Offsite Municipal Solid Waste Landfill	Waste — Municipal Solid Waste	No	No	LM Internal tracking documents
Onsite Municipal Solid Waste Landfill	N/A	No	No	No
Municipal Solid Waste and Construction Debris Diversion	Waste — Waste Diversion	No	No	LM Internal tracking documents

Abbreviations:
N/A = not applicable

LM disposal cells and onsite landfills did not fall within the definitions and criteria previously provided in the DOE *FY 2015 Consolidated Energy Data Report (CEDR) Technical Support Document* guidance for onsite solid waste disposal. Therefore, there are no data to report for onsite waste disposal in the Waste Diversion section of the Dashboard.

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

A few LM pollution prevention and waste minimization 2016 success stories pertaining to nonhazardous solid waste, excluding construction and demolition materials and debris, included:

- LM had a 36.8% reduction in the total weight of nonhazardous solid waste generated in 2016, excluding construction and demolition materials and debris, as compared to 2015. Overall waste reduction will significantly factor into helping LM pursue pollution prevention and zero-net waste in the future. Although LM had an overall reduction in waste, we only diverted 30.2% of non-hazardous solid waste from landfills in 2016. Thus, the 50% waste diversion goal was not met. Goal performance in 2016 is attributed to having fewer projects and having less larger-scale waste diversion opportunities.

- Some atypical non-hazardous solid waste was generated from the Pinellas site's installation of injection wells in support of a groundwater remedial action. LM opted to use horizontal injection wells to deliver microbial culture and amendments to remediate chlorinated solvent source areas beneath a very large, occupied building. The drilling fluid utilized to drill the boreholes for the horizontal wells had several environmental advantages, but could not be recycled or reused at the end of the project, and had to be disposed offsite at a licensed waste facility. Although this method of remediation yields more waste than conventional vertical boreholes, it limited the disruption to the tenant and their operations and will allow numerous future injections without the need for additional drilling and associated drilling fluid.
- In 2016, the Fernald Preserve staff was able to reuse approximately 16 tons of nonhazardous solid waste plant material generated from onsite tree and brush trimming, tree removal, and invasive plant species management efforts. The organic material was reused onsite as landscaping mulch and in mulch berms for storm water control purposes. This waste reduction opportunity also resulted in an additional pollution prevention opportunity by eliminating the need for using and later disposing of approximately 1000 feet of silt fencing.
- LM received two awards for activities at the Rocky Flats site:
  - A GreenGov Presidential Award in the Keeping it Clean category for the 2015 "Sustainable Innovation - Tweaking Treatment/Reducing Waste" project at the Rocky Flats site.
  - A DOE Sustainability Award in the Waste Reduction and Pollution Prevention category for the "Sustainability Innovations Improve Groundwater Treatment while Reducing Waste and Pollution" efforts at the Rocky Flats site.

As a best management practice, LM maintains 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 with data compiled by the Environmental Compliance points of contact for each LM site.

As another best management practice LM continues to use the *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies* to facilitate pollution and waste prevention in the job planning process. 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.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

7.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will continue doing the following:

- Re-evaluating waste streams and chemical inventories at staffed sites
- Identifying opportunities for increased reuse and recycling at staffed sites and on projects
- Investigating net-zero strategies that would help LM begin developing a path to achieving the 2025 goal
- Implementing 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.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Share and encourage the use of the SFTool with site Environmental Compliance points of contact and project leads to promote use of appropriate and effective environmentally preferable products.
- Incorporate references for *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies* in relevant manuals as they are revised.
- Share a complex-wide pollution prevention message during Pollution Prevention Week.
- Evaluate updates to nonhazardous waste recycling stations designed to increase participation.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

7.1.3 Response to additional SSP guidance questions on municipal solid waste

Discussions of site efforts toward goal-specific areas are combined here for both Section 7.1, "Non-Hazardous Municipal Solid Waste," and Section 7.2, "Construction and Demolition Debris," recycling and waste diversion efforts (50%).

[a.] 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.

[b.] LM's efforts to meet diversion goals of 50% for both nonhazardous solid waste and construction and demolition waste are 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.

[c.] LM staffed sites are 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. Some staffed sites have investigated options or tried collecting compostable material but have encountered obstacles that impeded efforts, so efforts have been discontinued. Only one office site is collecting compostable material on a volunteer basis. The Fernald Preserve has larger amounts of outdoor organic material waste, which is not composted but is reused onsite. Discontinuing composting at staffed sites affects a small percentage of LM's overall waste stream.

[d.] LM's site population is increasing. Slight changes in site populations do not significantly impact solid waste or construction or demolition activities. Waste generation rates and volumes are expected to remain generally the same. Additional recycling receptacles may help increase waste diversion. LM construction and demolition activities are generally project- and mission-driven and are not significantly impacted by employee populations.

[e.] LM does not use waste-to-energy systems.

[f.] LM has increased the use of acceptable non-toxic 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. Ozone-depleting substances and fluorinated gases are a relatively small part of LM's overall operations and represent a small fraction of overall anthropogenic carbon-dioxide-equivalent emissions for the organization.

[g.] LM applies the concepts of integrated pest management when a pest issue, typically involving the control of one or more state-listed noxious weeds, occurs on one of its sites. LM uses a combination of biological, cultural, mechanical, and chemical methods to control weed infestations. At several sites, LM has employed biological control methods by

releasing insects that specifically target and damage the noxious plant species. At the Sherwood, Washington, Disposal Site and the Lowman, Idaho, Disposal Site, infestations of the noxious plant Dalmatian toadflax have been successfully controlled by releases of *Mecinus janthinus*, a stem-boring weevil. Cultural methods implemented at other sites have included (1) reseeding an area with native plant species that could outcompete the weeds, and (2) coordinating treatment efforts with adjacent landowners to ensure that everyone in the watershed was working together to control the noxious weeds. Mechanical methods have included hand-pulling, discing, and mowing. When biological, cultural, or mechanical methods are ineffective or cannot be used (e.g., when no biological or cultural method exists, when the terrain is too rough for equipment access), LM uses chemical methods to control infestations. In most situations, LM uses a selective herbicide that targets the invasive species only, not the desirable surrounding vegetation. The only time a selective herbicide is ***not*** used is when bare ground, such as within a fenced waste storage area, is desired. LM continues to evaluate new herbicides as they become available on the market to determine if they are more preferential (as effective but less toxic to the environment and applicator) than the herbicides currently being used. Efforts were made to encourage subcontractors to make the change as well. LM maintains an ecosystem improvement log that includes the results of weed control and ecosystem management activities.

[h.] LM's procedure review for materials that cannot be cleared for unrestricted release include Personal Property procedure reviews at least once every 2 years to ensure alignment with all guidelines in DOE Order 580.1A Admin Chg 1, Federal Acquisition Regulation policies and procedures, the *Code of Federal Regulations,* and the LMS *Personal Property Management Manual* (LMS/POL/S04336). The definitions and descriptions of property not cleared for unrestricted release are defined in DOE Order 580.1A Admin Chg 1 and in the *Personal Property Management Manual*. LM does not have any high-risk personal property (HRPP) or sensitive items, so the Personal Property department does not conduct annual inventories for these.

7.2 Construction and Demolition Debris

Divert at least 50% of construction and demolition materials and debris.

7.2.1 Performance Status

LM exceeded this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Construction and Demolition Debris	Waste — Waste Diversion	No	No	LM Internal tracking documents
Recycled Construction and Demolition Waste	Waste — Waste Diversion	No	No	LM Internal tracking documents

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM diverted 97.2% of construction and demolition debris from landfills in 2016. Thus, the 50% waste diversion target was met and exceeded.

A few LM pollution prevention and waste minimization 2016 success stories pertaining to nonhazardous construction and demolition materials and debris are listed below.

- LM had a 99.9% reduction in the total weight of nonhazardous construction and demolition materials and debris that it generated in 2016, as compared to 2015. Overall waste reduction will significantly factor into helping LM pursue pollution prevention and zero-net waste in the future.
- One LM 2016 success story for construction and demolition debris is that the Grand Junction disposal site staff was able to divert 100% of its office trailer roof replacement waste from being disposed in a landfill. The approximately 0.7 tons of asphalt roofing shingles were sent for recycling. Recycled asphalt shingles can be used as a component in hot mix asphalt for constructing asphalt roads.
- As part of early project planning, LM considers ways it can reduce, reuse, and recycle materials with project-planning tools (e.g., Project/Activity Evaluation, Statement of Work).
- To facilitate pollution and waste prevention in the job planning process, LM continued to use the *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.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

7.2.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

As a way of furthering public engagement and showcasing the historical importance of legacy sites, LM is undertaking an initiative to develop visitors centers at select sites. A new building will be constructed at the Weldon Spring site, with occupancy expected in 2019. To the extent practicable, this building will comply with the revised GPs, which includes waste diversion and

materials management. This activity would provide the most significant contributions to construction and demolition debris goal performance in the next few years.

LM will continue doing the following:

- Working with site leads and managers to identify 2017 construction and demolition activities.
- Encouraging the use of the *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies* to identify site-specific source reduction and diversion opportunities.

The expected impact of the planned activities is the maximized awareness and implementation of diversion strategies on more projects.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Review the site activities list for upcoming construction or demolition projects from which waste could be diverted.
- Test and evaluate the *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies* for at least two new proposed construction or demolition projects.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, request the opportunity to present the guidance at applicable task assignment meetings.

7.2.3 Response to additional SSP guidance questions on Construction & Demolition recycling and waste diversion (50 percent)

Responses are combined with nonhazardous solid waste responses and are provided in Section 7.1.3.

8 Energy Performance Contracts

Annual targets for performance contracting to be implemented in 2017 and annually thereafter as part of the planning of Section 14 of EO 13693.

8.1 Energy Performance Contracts

8.1.1 Performance Status

This is a newly identified goal, there was no 2016 target to meet; thus, performance related to this goal is limited.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

None.

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

None.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

8.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will evaluate new projects for ESPC ENABLE initiatives during the planning process.

b. Expected site contribution to the DOE goal(s)

LM doesn't typically have large enough projects on LM's owned facilities to warrant use of an ESPC. Therefore, LM doesn't expect to make any contribution toward this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- A member of a sustainability team will attend an ESPC webinar or course.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

8.1.3 Response to additional SSP guidance questions on energy performing contracts

[a.] FEMP's ESPC ENABLE initiative was investigated as a source of funding for energy-efficiency improvements at the Interpretive Center at the Weldon Spring site. After further research, it was decided that any improvements made would not achieve the paybacks necessary to make this a viable ESPC ENABLE project.

[b.] LM evaluates new projects for potential for ESPC ENABLE initiatives during the planning process. So far, LM has not identified any viable energy-performance contract projects for 2017. LM will evaluate future projects for energy-performance project viability.

[c.] Many of the LM sites are in remote locations and do not have facilities associated with them. In addition, its projects are usually small in scale and are not viable for an energy performance contract.

9 Electronics Stewardship

Require and ensure that 95% of eligible acquisitions each year are EPEAT-registered products.

9.1 Purchases

9.1.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Electronic Acquisition	Electronic Stewardship and Data Centers — Electronics Acquisition	No	No	No

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

One hundred percent of eligible acquisitions in 2016 were EPEAT-registered products, exceeding the requirement to purchase at least 95% EPEAT-registered products. Table 6 shows LM's 2016 EPEAT purchases.

Table 5. 2016 EPEAT Purchases

Electronics	Total Number Acquired	EPEAT-Registered			EPEAT Compliance
		Bronze	Silver	Gold	
Desktop Computers	4	0	2	2	100%
LCD Monitors	56	0	1	55	100%
Notebook Computers	138	0	0	138	100%
Tablets	7	0	5	2	100%
Printers	1	1	0	0	100%
Multifunction Devices	3	0	1	2	100%
Scanners	1	0	1	0	100%
All Eligible Electronics	**210**	**1**	**10**	**199**	**100%**

LM was the recipient of a 2016 EPEAT Purchaser Award in recognition of LM's:

- Policy of procuring environmentally preferable electronic equipment.
- Use of EPEAT-required purchasing language on all contracts, solicitations, and Requests for Proposals.
- Ongoing record of EPEAT purchases.
- Overwhelming selection of EPEAT Gold-rated monitors and notebook computers.

As a best management practice, LM's IT group has developed and, over the years, refined the process of evaluating electronic equipment for purchase. IT personnel check vendor descriptions as well as the EPEAT website (http://www.epeat.net) to ensure that electronic equipment selected for purchase is EPEAT, Energy Star, and FEMP compliant before sending the request to Contract Services, where EPEAT compliance is confirmed. This process includes the IT group confirming that electronic equipment purchases are Trade Agreements Act (TAA)–compliant when searching for solutions to equipment needs, and then the Contract Services group separately verifying TAA compliance.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

9.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will continue procuring EPEAT-registered products at current compliance levels in accordance with DOE requirements. The expected impact will be to achieve the 2017 goal.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to manage purchases of electronic products in an environmentally responsible manner.
- Continue to require that purchases of noncompliant products have written approval from a subject matter expert.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

9.1.3 Response to additional SSP guidance questions on EPEAT-registered products

[a.] LM policies and procedures require the procurement of EPEAT-registered products.

9.2 Power Management

Ensure 100% of eligible PCs, laptops, and monitors have power management enabled.

9.2.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Power Management	Electronic Stewardship and Data Centers — Electronics Operations	No	No	No

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM uses the following best management practices to reduce power usage:

- LM administers power management on all desktop and laptop systems, which extends to digital displays and printers, via network group policy and cannot be altered by users. Systems running mission-critical processes requiring exemption from the standard power management configuration are documented as exceptions and controlled by a separate group policy.
- LM makes use of electricity-monitoring and uninterruptible power supply management utilities to measure and evaluate electricity consumption of data center facilities.
- A separate metering system monitors data center and server room power use in real-time and has been instrumental in reducing power usage at all LM office locations.
- Additional discrete, quantifiable data is collected and referenced via a virtual machine and the Help Desk trouble-ticketing system for details regarding desktops, laptops/notebooks, and print-related devices.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

9.2.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

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.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to take action to conserve energy usage at all LM data centers.
- Continue progress in 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.
- Continue in the efficient use of desktop and / laptop/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/notebook computer systems.
- Remain vigilant in the awareness of these improvements and incorporate them as they become available. The electronic efficiency of these computer systems is progressing rapidly with successive model enhancements.
- Continue the phase-out of locally attached, personal-use printers facilitated by the secure printing option now available on all network-managed multi-function devices at all locations. The growing use of shared network devices will contribute to the ongoing reduction of paper, printing supplies, and power usage.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to the activities described in Section 1.1.2.f, users receive periodic reminders via the Intranet or email that the LM policy is to power systems down at the end of the business day. This information is also posted to the LM Intranet on the Legacy Management Help Desk Frequently Asked Questions (FAQs) webpage.

9.2.3 Response to additional SSP guidance questions on power management

[a.] LM has established and implemented policies, guidance, and tools to ensure the use of power management on all eligible electronic products.

[b.] LM's implementation of power management on all desktop and laptop systems, which extends to digital displays and printers, is administered via network group policy and cannot be altered by users. Systems running mission-critical processes requiring exemption from standard power management configuration are documented as exceptions and controlled by a separate group policy.

[c.] Power management has been fully implemented.

9.3 Automatic Duplexing

Ensure 100% of eligible computers and imaging equipment have automatic duplexing enabled.

9.3.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Electronics O&M	Electronic Stewardship and Data Centers — Electronics Operation	No	No	No

Abbreviations:
O&M = operations and maintenance

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM uses the following best management practices:

- All network printer and copier paper acquired by LM is made from recycled product.
- All LM desktop and laptop systems are imaged with power management settings configured in accordance with the government standards. The controls for power management on all LM systems are locked, which prohibits users from changing these controls.
- LM implemented the "Locked Output" feature on all network printers. When activated on a user's computer, a personal identification number (of 4 to 8 digits) must be entered at the printer's console panel to produce the printout. LM expects to see the following benefits:
  - — Decreased paper and toner waste
  - — Mistaken print jobs can be deleted before printing
  - — Forgotten output is deleted from printer memory after 8 hours
  - — Only the originator can retrieve output from printer memory, eliminating need for "personal printers"

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

9.3.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will continue to evaluate efficient and environmentally sustainable printing capabilities in accordance with EO 13693.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Measure reduction of paper, toner cartridges, and power consumption after implementation of code-required printouts.
- Continue to implement best practices from the DOE Guide 436.1-1, Federal Sustainable Print Management.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.2.1.f.

9.3.3 Response to additional SSP guidance questions on automatic duplexing

[a.] LM implements best practices from the DOE Guide 436.1-1, *Federal Sustainable Print Management.*

[b.] LM has policies and procedures that require and ensure that automatic duplexing be enabled on all eligible electronic products.

[c.] Automatic duplexing is in place.

9.4 End of Life

Ensure 100% of electronics that are no longer usable are reused or recycled using environmentally sound disposition options each year.

9.4.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Electronic Disposition	Electronic Stewardship and Data Centers — Electronics End-of-Life	No	No	LM Internal tracking documents

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM's IT group has developed and, over the years, refined the process for disposal of old equipment. When disposition of equipment occurs, IT coordinates with the Personal Property group to provide pictures for posting to the GSAXcess site. For equipment not appropriate for sale, local donation avenues have been established appropriate for the location to facilitate reuse of equipment no longer useful to LM. Recycling is viewed as a last resort if sale or reuse are not viable options. Table 7 shows detailed information on electronics reused and recycled during 2016.

Table 6. 2016 Electronics Reuse and Recycling

Electronics Reuse and Recycling—Bulk				
Weight of Bulk Electronics	Weight Transferred or Donated Pounds (lbs)	Weight Recycled Through Certified Recycler (lbs)	Weight Recycled Through Non-Certified Recycler (lbs)	Weight disposed (e.g., landfill) (lbs)
	3986	4549	0	0

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

9.4.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

Maintain the percentage of electronic assets that are disposed of through sound disposition practices.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to surplus or excess electronic products in an environmentally responsible manner.
- When possible, continue to choose reuse of electronics over recycling.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

9.4.3 Response to additional SSP guidance questions on electronics end-of life

[a.] The LM procedures identified in the LMS *Personal Property Management Manual* require that all personal property excess actions involve Personal Property personnel. Specific to electronics recycling, all electronics that can be reused in LM can be transferred; however, LM uses GSAXcess to disposition 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-Certified recycler to collect and dispose of all electronic waste.

In addition to using GSA and R2-certified recycling services, LM again participated in the United States Postal Service (USPS) BlueEarth recycling event in 2016 to help all federal and contractor employees dispose of personal electronics waste. USPS BlueEarth is a group of federal recycling programs coordinated by USPS to support sustainability initiatives that make it easy for federal agencies and their employees to properly dispose of items like empty ink cartridges and unwanted small electronics. For 2016, 140 pounds of personal electronics waste from LM federal and contractor personnel were recycled. This program is offered and available to all employees and contractors to the federal government year round.

9.5 Data Center Efficiency

Establish a power usage effectiveness (PUE) target in the range of 1.2–1.4 for new data centers and less than 1.5 for existing data centers.

9.5.1 Performance Status

LM met this 2016 target.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
PUE	Electronic Stewardship and Data Centers — Operations and Maintenance	No	No	FDCCI Worksheet

Abbreviations:
FDCCI = Federal Data Center Consolidation Initiative

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

LM successfully exceeded the PUE 2016 interim target of 1.4 with a score of 1.32. This is attributed to LM's use of top-of-the-line racking and cooling infrastructure in conjunction with following manufacturers' recommended maintenance programs.

LM maintains two standard data centers and three smaller data centers, as defined by the Federal Data Center Consolidation Initiative (FDCCI) at satellite offices. A separate metering system that monitors power use in real time has been instrumental in reducing power use at all locations.

As a best management practice LM has 26 virtualized hardware servers doing the work of 248 individual hardware servers. Server virtualization allows a single PC server, using specialized software, to mimic the functionality of what once took many PC servers.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

9.5.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will continue to optimize the configuration of LM's data centers by monitoring data center power consumption in accordance with FDCCI standards and through LM's ongoing server virtualization effort.

b. Expected site contribution to the DOE goal(s)

LM expects to continue to contribute to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- LM will observe and follow all guidance and metrics as determined by the FDCCI.
- The LMS certified energy manager and the LMS EMS lead to visit the LMBC to investigate the best method for determining the LMBC data center's PUE.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

See information provided in Section 1.1.2.f.

9.5.3 Response to additional SSP guidance questions on Data Center Efficiency

[a.] LM submits information on sustainability requirements of EO 13693 when requested in accordance with the Federal Information Technology Acquisition Reform Act and the DOE's Data Center Optimization Initiative.

[b.] LM reports site data center inventories and sustainability performance metrics reports to the DOE Chief Information Officer via the integrated data call process.

[c.] LM follows the DOE Chief Information Officer's guidance to achieve sustainability goals.

10 Climate Change Resilience

10.1 Policies

Update policies to ensure planning for, and addressing the impacts of, climate change.

10.1.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

None.

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance.

The *LM 2016–2025 Strategic Plan* was issued in May 2016. The LM Strategic Plan includes climate change considerations for remedy and site management in activities related to Goal 1, Protect Human Health and the Environment, and Goal 4, Sustainably Manage and Optimize the Use of Land and Assets.

LM is considering requiring new technical task plans under the Applied Studies and Technology (AS&T) program to include a discussion of how the research supports climate change resilience.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

The LM Strategic Plan was issued June 22, 2016. This plan, along with updated DOE Orders, will serve as the foundation upon which additional policy development can be considered. Including climate change considerations as part of the strategic plan provides direction to organizational leadership, and it will move LM forward on the path to fully incorporating these concepts into operations.

The LM Climate Change Adaptation team advocate has provided annual presentations to management identifying the evolution of Executive- and agency-level climate adaptation and resilience policies and initiatives. The LM advocate also participated in a climate initiatives and activities panel discussion at a DOE-Environmental Management conference the National Governor's Association Center for Best Practices, Federal Facilities Task Force, 14th combined intergovernmental meeting with DOE.

In May 2016 a climate change risk assessment was conducted at the Fernald Preserve based on the Guiding Principle requirements.

LM employs the following best management practices to increase climate change resilience awareness and keep LM up-to-date on DOE initiatives:

- Regular attendance on Climate Adaptation Collaborative teleconferences.
- Active participation in the DOE Climate Resilience Working Group.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

10.1.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

The LMS contractor is revising the *Emergency Management System Description* (LMS/POL/S14463) and will include climate change considerations.

b. Expected site contribution to the DOE goal(s)

LM expects to continue contributing to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

LM anticipates requiring additional funding for future resilience efforts relating to policy updates, vulnerability screenings and for any buildings or other structures improvements. However, it is too early in the effort for funding estimates at this time.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Begin incorporating the LM Strategic Plan goal objectives and updated policy language into other documents.
- Implement the revised LM *Environmental Policy*, which includes climate change considerations.
- Determine the best way to incorporate climate resilience considerations featured in DOE Order 430.1 C into the revision of the Real Property Management Manual (LMS/POL/S04336).
- Pursue appropriate actions when the departmental "Climate Change Preparedness and Resilience" memo from the DOE Secretary and the "Climate Change Resilience: Activities and Opportunities" report from the DOE Climate Resilience Working Group are issued.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities provided in Section 1.1.2.f, the LM Climate Change Adaptation team will help identify training opportunities available to LM managers and employees to help them better understand the impacts of climate change and consider resilient safeguards. DOE has identified a need for a broad-based training; LM will recommend this training to employees when it is made available. In the meantime, LM will make information from the 2015 DOE Leadership Development Series "Climate Change for Federal Managers and Senior Leaders" available to employees.

10.1.3 Response to additional SSP guidance questions on climate change policies

[a.] LM's efforts to define risk, take action to build resilience, and establish regional and local coordination include the following:

- Ongoing review of National Climate Assessment information and other climate science resources to further understand potential risks, especially with regard to occupied sites, disposal cells, and groundwater remediation systems
- Identifying key parameters and thresholds for identified risk areas, evaluating potential scenarios, and determining applicable adaptation and resilience measures
- Continuing to participate in agency working groups, attending regional group webinars and trainings and coordinating them locally to the extent practicable, and maximizing educational and scientific collaboration opportunities.

[b.] LM plans to compile the Monticello site pilot vulnerability assessment information and evaluate it with regard to the forthcoming screening guidance. This will help determine the path forward for future LM site screenings and potential assessments.

[c.] LM plans to further identify (1) climate risks; (2) affected policies, plans, or programs; (3) and milestones or timelines to determine progress and success. LM has evaluated climate information tools and resources available from other organizations, shared that information with other functional groups, and updated manuals or procedures to the extent practicable.

[d.] LM plans to incorporate climate-resilient design and management elements into the design of new agency buildings beginning with constructing a new interpretive center at the Weldon Spring site. To the extent practicable, the new building will comply with the revised GPs, which now include GP VI, *Assess and Consider Climate Change Risks*. The Climate Change Adaptation Team provided climate resilience resources to the project team for consideration.

10.2 Emergency Response Procedures and Protocols

Update emergency response procedures and protocols to account for projected climate change, including extreme weather events.

10.2.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

None.

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance.

None.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

An accomplishment toward updating emergency response procedures and protocols to account for projected climate change, including extreme weather events is that LM successfully completed a *Baseline Needs Assessment* and an *All Hazards Survey* for all occupied and unoccupied sites. Among other issues, the needs assessment addressed LM's capabilities to respond to natural phenomena disasters and climate change adaptation for severe weather events. The Emergency Management Program Description has been developed and is in internal review.

The Weldon Spring site sustained damage from severe weather events (e.g., tornados) in the past couple of years. As a lesson learned in 2014, storm shelters were installed onsite to accommodate staff and visitors in the event of a severe weather event. The shelters are proving to be very helpful and were used during a severe weather event this year.

As a best management practice, federal disaster determinations identified in the *Federal Register* for areas near LM sites are tracked in the *Quarterly Environmental Compliance Regulatory Review Report*. Any impacts to LM sites are confirmed and noted accordingly.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

10.2.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will review recommended actions from the emergency response needs assessment and the state of climate science to make adjustments to climate change adaptation and severe weather emergency response planning in the future.

b. Expected site contribution to the DOE goal(s)

LM expects to continue contributing to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue to track severe weather impacts to LM sites and federal disaster determinations that are identified in the *Federal Register* for areas near LM sites.
- Continue to review existing security risk and emergency protocols for potential impacts from climate change.
- Obtain regional predictions of climate change and evaluate potential impacts of these changes on the performance of remedies and facilities.

e. Request for technical assistance if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, identify and share regional climate change prediction information and emergency response resources with site leads and managers for consideration in site project planning and decision making.

10.2.3 Response to additional SSP guidance questions on climate change emergency response procedures and protocols

[a.] LM implemented measures to revise, enhance, and modernize emergency response procedures. Those measures included incorporating climate resilience considerations into the *Comprehensive Emergency Management System* (LMS/POL/S04326). The LMS contractor revised the document in 2016 and it is currently in internal review. The revised document includes evaluation of the effects of climate change on emergency response needs. LM will continue to consider climate change for emergency planning purposes.

Additionally, the GIS group has created web map applications through ArcGIS Online that allow select users to determine if an earthquake or fire has the potential to impact a site. The Environmental and Spatial Data Management team is consolidating spatial datasets so that additional applications similar to the earthquake and fire web maps can be constructed. LM examined new technologies such that web maps supporting emergency response procedures can become mobile or available when other services, such as cellular service, are unavailable.

10.3 Projected Human Health and Safety Impacts

Ensure workforce protocols and policies reflect projected human health and safety impacts of climate change.

10.3.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

None.

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

The Rocky Flats staff replaced a passive zero-valent iron (ZVI) groundwater treatment system by installing below grade piping to route the influent to an existing solar-power air stripper that is better able to treat a wide range of groundwater volumes and meet treatment requirements. The ZVI system had very little flexibility in treating large changes in groundwater volumes. The existing air stripper has sufficient capacity to treat influent from both collection systems. The air stripper allows the Rocky Flats site groundwater treatment system to better respond to potential changes in climate (e.g., drought or floods) with improved groundwater treatment reliability.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

The Westminster office staff conducted a shelter-in-place emergency drill in August 2016, in which the scenario was a tornado threat. In response to the federal government's climate-change-resilience initiative, the contractor has determined that tornadoes might be more likely at several sites which do not have tornado shelters. The Westminster office has identified tornado assembly areas, which are marked on maps that are posted throughout the office building. The Westminster drill was part of an evaluation of evacuation and shelter-in-place drills that were performed at various LM occupied sites.

Storm shelters at the Weldon Spring site ensure staff and visitor safety in the event of a severe weather event.

The Climate Change Adaptation team provided Weldon Spring project team members climate change adaptation and resilience information for consideration in construction plan development for the visitors center at the site.

The Rocky Flats site's current procedures and policies allow the flexibility and controls to provide the necessary safety responses to quickly changing weather conditions. During the weekly Plan of the Week, the weather forecast for the week is reviewed and any impact the weather might have on projects and personal safety, such as extreme temperatures, high winds, lighting, heavy rains or snows, insects, and other wildlife, is discussed. Similar activities take place at other LM sites during daily safety meetings.

LM has an incident reporting procedure in place for evaluating and addressing any incidents that impact human health and safety.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

10.3.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

The CERCLA 5-year review for the Rocky Flats site will include consideration of the potential climate change impacts. This CERCLA 5-year review will be final in 2017.

LM plans to perform structural analysis on the Communication Building at the Fernald Preserve to see if it can serve as a potential storm shelter.

b. Expected site contribution to the DOE goal(s)

LM expects to continue contributing to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Consider further the human health and safety impacts in the face of climate change.
- Continue to evaluate severe weather situations impacting LM sites.
- Review existing health and safety protocols for areas which may be impacted by climate change.
- Obtain regional predictions of climate change and evaluate potential human health and safety impacts associated with LM sites.
- Consider climate-resilient design measures for any new building plans.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, identify and share regional climate change projection information with Safety and Health representatives for consideration in planning and decision making.

10.3.3 Response to additional SSP guidance questions on climate change projected human health and safety impacts

[a.] LM workforce protocols have been adapted to reflect advancements in understanding climate change impact over the course of the year through environmental policy updates affirming management commitment to identifying hazards and protecting people and the environment. Sites that frequently experience severe weather are evaluating and adjusting their workforce protocols for greater consideration of associated health and safety impacts.

10.4 Site Management Commitment

Ensure site and lab management demonstrates commitment to adaptation efforts through internal communications and policies.

10.4.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

None.

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

LM issued the LM Strategic Plan in May 2016. This plan includes climate change considerations for remedy and site management in Goal 1, Protect Human Health and the Environment and Goal 4, Sustainably Manage and Optimize the Use of Land and Assets.

LM has demonstrated a commitment to adaptation efforts through the continued work of the Climate Change Adaptation team as communicated through the team's employee messaging efforts and the team's implementation plan. The team reviews climate change requirements and then identifies ways to help LM meet those requirements. The Climate Change Adaptation team assists LM in compliance with DOE Order 436.1, the DOE Strategic Sustainability Performance Plan, EO 13693, and EO 13653.

The AS&T program's Five-Year Plan includes an annual report that communicates management commitment to efforts that explore and apply innovative and cost-effective ways to improve LM's long-term protectiveness of human health and the environment. The AS&T program includes a portfolio of long-term technical studies where the deliverables are new knowledge, enhanced technical capability, advancement of current operations, and new or improved technology applications. Part of the 2016 annual report was the *Communication Model for Applied Studies & Technology (AS&T) Program* (LMS/ESL/S13220), which outlines how information is shared with LM management and operations staff and other stakeholders. Effective documentation and communication of AS&T products and services maximizes the positive impacts of AS&T projects, including climate change studies, to LM objectives.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

Climate change adaptation was the third quarter 2016 communication highlight topic. An article titled "The Practical Side of Climate Change Adaptation" was developed for the internal quarterly newsletter, *ECHOutlook*. It identified DOE's policy statement for integrating climate resiliency across DOE, introduced the Los Alamos National Laboratory climate adaptation case study, and described LM's current climate adaptation efforts.

The LM *Program Update* is a quarterly publication designed to share the status of LM activities with internal and external stakeholders. Recent issues have introduced the release of the LM Strategic Plan and highlighted AS&T program accomplishments, such as the use of unmanned

aerial systems to improve understanding of evapotranspiration (ET) fluctuations and remediation of groundwater; the wildfire event at the Edgemont, South Dakota Site; and highlights of a keynote presentation on ecological engineering remedies given at the International Atomic Energy Agency International Conference on Advancing the Global Implementation of Decommissioning and Environmental Remediation Programmes in Madrid, Spain.

As a best management practice, Climate Change Adaptation team members have participated in DOE Climate Change Adaptation Working Group conference call meetings in the past and currently participate in regular climate change adaptation collaborative meetings. The LM advocate for the team also provides an annual presentation to LM management.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

10.4.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

The LMS contractor intends to provide the same management briefing to LMS managers that LM provided to LM management.

The Climate Change Adaptation team is planning a lunch-and-learn opportunity featuring a new climate change documentary.

b. Expected site contribution to the DOE goal(s)

LM expects to continue contributing to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Prepare and present a climate change resilience presentation for LM and LMS management in December 2016.
- Evaluate the screening guidance that will be issued in support of the Secretarial Memo and begin plans for vulnerability screenings.
- Evaluate the revised DOE Order 430.1C, *Real Property Asset Management*, and determine additional ways to support the climate resilience requirements.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, present a climate change resilience presentation to LM and LMS contractor management teams.

10.4.3 Response to additional SSP guidance questions on site management commitment on climate change

[a.] A synopsis of LM management communication practices that encourage the adoption of adaptation policies includes the updates in the LM Strategic Plan; an annual climate change adaptation presentation to senior management; periodic articles in the quarterly LM *Program Update*, which reaches LM stakeholders; and awareness campaigns, that are generally conducted as part of the EMS communication platform. In accordance with the DOE Climate Adaptation Policy Statement, LM has updated or initiated updates to various organizational-level policies and procedures.

10.5 Best Available Science

Ensure that site and lab climate change adaptation and resilience policies and programs reflect best available current climate change science and are updated as necessary.

10.5.1 Performance Status

LM met this goal.

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

None.

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

LM supports innovative compliance-based research and technology development through the AS&T program. AS&T program objectives include recording and analyzing data on long-term performance; studying and applying new technologies; and taking corrective action necessary to modify engineered cells, treat contaminated groundwater, and sustain institutional controls. The AS&T team is evaluating the potential impacts of climate change on remedy performance and the management of natural resources on LM sites. AS&T scientists seek to establish collaborations with state-of-the-science researchers, share costs, foster education with a focus on stakeholder communities, disseminate new knowledge through conferences and workshops, and disseminate results through peer-reviewed publications.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

AS&T projects are complex long-term projects that include efforts such as long-term disposal cell cover performance studies, enhanced natural attenuation through bioremediation studies, and educational collaboration with regional colleges and universities. In 2016, the AS&T program worked on 11 technical task plans and 11 ancillary work plans, several of which directly or indirectly relate to climate change adaptation and remedy resilience. Ongoing accomplishments and successes include studies on:

- The effects of soil-forming processes on cover engineering properties, such as soil permeability and radon flux at the Falls City, Texas, Disposal Site and Bluewater, New Mexico, Disposal Site
- Contaminant uptake by plants growing on disposal cells through a University of Arizona educational collaboration that evaluated sites representing a broad range of climates, cover designs, soil, and vegetation types
- Water balance cover monitoring using an alternative cover design designed to be resilient to long-term changes in climate and ecology at the Monticello disposal site

As a best management practice, information from these projects is used to improve understanding of remedy performance. A better understanding of remedy performance provides information that can be used to model potential future performance scenarios. Educational outreach has been a successful way to gather and share information with other organizations.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

10.5.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

The following AS&T technical task plans are expected to contribute to real-world application of best available science to LM initiatives and remedy performance evaluations.

Long-Term Cover Performance

Select AS&T projects are investigating the adaptability of disposal cell covers to climate change and are identifying natural analogs for clues about possible long-term changes in cover performance. AS&T projects also include monitoring the performance of alternative cover designs and evaluating techniques to enhance or transform conventional covers with the goal of maintaining protectiveness over the long term.

Pilot Studies

AS&T pilot studies continue work on passive sustainable remedies as alternatives to active pump-and-treatment technologies. LM will continue to evaluate natural and enhanced phytoremediation using native desert plants, natural and enhanced microbial denitrification, and land farming as potential remedies for areas where there are continuing sources of groundwater contamination. These studies investigate sustainable remediation strategies for nitrogen-and uranium-contaminated soil in arid and semiarid environments. The AS&T pilot studies are specific studies that help LM better understand natural processes that can lead to more resilient remediation.

At a public open house held in April 2016, LM included a poster session on the results of a study on long-term sustainable plant-based remediation at the Monument Valley site. The study shows that nitrate groundwater contamination can be successfully addressed using native plants that will remain resilient even as the environment changes, ensuring the protectiveness of the remedy.

Grow Higher Education Collaborations

The AS&T Educational Collaboration task plan supports the Secretary of Energy's commitment to science, technology, engineering, and math education for Native American students. For one of the projects, "Adaptation of Disposal Cell Covers to Climate Change," a University of Arizona PhD student developed a research plan to project the long-term performance and adaptability of LM disposal cells near Native American communities to climate change. This project will help LM satisfy executive directives and DOE directives related to potential effects of climate change on federal programs.

b. Expected site contribution to the DOE goal(s)

LM expects to continue contributing to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

In addition to activities discussed in paragraph "a." above, LM will pursue the following goals and milestones:

- Continue monitoring the plant community, percolation, and the hydraulic performance of the Monticello water balance cover in response to changes in climate and ecology.
- Draft a proposal to use the long-term monitoring data to evaluate different water balance models used to design disposal cells and landfill covers.
- Draft a monograph for publication on components of the Monticello water balance cover study, including climate change scenarios and natural analogs of long-term performance.
- Provide continued graduate committee support to students working on climate change and resilient land stewardship studies through adjunct faculty appointments with the University of Arizona.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, LM AS&T scientists will continue to attend trainings and conferences as needed to support their study projects. The group will also continue to implement its communication plan, as well as *Applied Studies and Technology (AS&T) Program Guidance to Identify, Select, and Monitor Applied Studies.*

10.5.3 Response to additional SSP guidance questions on climate change best available science

[a.] LM is in the process of considering climate change science as it specifically relates to LM sites through information from the national climate assessment and numerous other resources. LM included climate change considerations in several parts of the LM Strategic Plan. AS&T program activities continue to use cutting-edge science and technology to further understanding of climate change impacts on long-term cover performance and other remedies.

10.6 Climate Change Resiliency Survey

Complete the dashboard climate change resiliency survey.

10.6.1 Performance Status

a. Referencing pertinent databases and/or workbooks associated with the goal for quantitative information

Refer to the chart below to locate LM quantitative data related to this goal.

Related Data	Dashboard Links	Energy Star Portfolio Manager	FIMS	Other (Identify)
Climate Resilience	Data — Climate Resilience	No	No	No

b. Describing major initiatives or changes to missions or facilities that contribute in significant ways to goal performance

The Climate Change Adaptation team reviewed the DOE guidance document *Practical Strategies for Climate Change Vulnerability Assessments* along with other sample DOE and non-DOE vulnerability assessments and developed a pilot vulnerability analysis framework to use for LM sites.

c. Sharing success stories, accomplishments, lessons learned, and best management practices

The Climate Change Adaptation team pilot tested a portion of the vulnerability assessment framework with the Monticello site team. The results of the pilot vulnerability assessment meeting are being compiled and will be presented to LM and LMS management for further

discussion. Lessons learned from the Monticello pilot assessment will help refine the screening process and determine which LM site or sites to evaluate next.

Another accomplishment is the HPSB survey LM conducted using the revised GPs and associated instructions was performed on the Fernald Preserve Visitors Center, Fernald Preserve in May 2016, as part of the EISA 2007 Section 432 quadrennial energy evaluation. This survey also included evaluating GP VI, *Assess and Consider Climate Change Risks*. The Fernald Preserve Visitors Center complied with the GPs.

d. Noting baseline changes, impacts, and justifications in the SSP. Identifying, updating and justifying any changes to previously reported data, including the baseline year in the appropriate reporting tool. Major changes are subject to approval by program and SPO [Sustainability Performance Office]

None.

10.6.2 Plans and Projected Performance

a. Identify planned activities (e.g., mission changes, conservation measures, renewable energy systems, new construction or deactivation and decommissioning (D&D), policy and procedures updates, training) and expected impact of planned activities

LM will compile and evaluate the results of the Monticello vulnerability assessment with regard to the new screening guidance from the SPO.

The LM Climate Change Adaptation team advocate will attend an upcoming climate change training hosted by the Association of Climate Change Officers in partnership with the National Renewable Energy Laboratory and the Colorado Water Conservation Board. Workshop participants will learn from experts about the implications of climate change with a regional focus added for Colorado and the Rocky Mountains.

b. Expected site contribution to the DOE goal(s)

LM expects to continue contributing to meeting this DOE goal.

c. Estimated additional funding needed beyond planned activities and typical operation costs for meeting the goal

None.

d. Site specific measurable goals and milestones (3–5) for the next fiscal year

- Review the SPO vulnerability screening guidance and use it to develop a prioritization plan for assessing other LM sites.
- Continue to explore the best way to incorporate climate change vulnerability and resilience considerations into existing site management practices.
- Continue to provide regional and site-specific climate resource support to site and project managers.

e. Request for technical assistance, if needed

None.

f. Planned or needed training to increase awareness and encourage behavior change

In addition to activities described in Section 1.1.2.f, LM employees will continue to participate in webinars and formal trainings, develop general awareness training for employees, and continue to share information with site management and project personnel.

10.6.3 Response to additional SSP guidance questions on climate change best available science

[a.] The following answers relate to questions from the climate change resiliency survey that was completed in the Dashboard.

1. LM completed a high-level vulnerability screening as part of the department-wide initiative in 2012. The 2012 screening was uploaded to the Dashboard for reference.
2. LM has partially completed a pilot vulnerability assessment for one LM site, and completed a Guiding Principle assessment on certain assets at another LM site.
3. Projected climate change impacts have not yet been integrated into site plans and asset management systems. LM is unique in that it has many sites that are grouped by different regulatory frameworks. Many of the regulatory frameworks require site-specific long-term surveillance and maintenance plans; however, the contents of those plans are driven by the respective regulatory drivers relating to the long-term remedy. LM is in the process of determining the best reporting pathway for integrating climate change impacts for sites. LM is reviewing the new DOE Order 430.1C, *Real Property Asset Management,* to determine if certain asset management system tasks would be a possible avenue for site climate change impact considerations.
4. Climate-resilient design is not integrated into all LM building upgrades at this time partly because many of LM's occupied office sites consist of older leased buildings. The Westminster office will be moving into a new building in 2017; however, it is being built by the landlord of the building they currently occupy. LM has limited input on the exterior design. Interior sustainability requirements are part of the GSA lease template and are included in the lease language. The Weldon Spring site is planning to construct a new building to replace its current Interpretive Center. Climate-resilience information has been provided to the project team for design consideration. Another LM building plan is to modify the historic log cabin at the Grand Junction office site into a visitor center. This property is also owned by the landlord that leases the entire Grand Junction office complex. LM is working with the landlord on the modification designs for that building. Climate-resilient design measures will be considered to the extent practicable.
5. Severe weather or other extreme events have resulted in LM occupied site shutdowns. In 2016 LM had office closures on six occasions and five delayed start or early releases due to weather conditions compared to one office closure and three delayed start or early releases in 2015. In 2016, two unoccupied LM sites had wildfires directly onsite and one was in the area of a large wildfire. One site sustained minor fence damage as a result of firefighting efforts; otherwise the impacted sites and their remedies were not compromised. Four LM sites were in areas identified as national

disaster areas qualifying for emergency federal assistance. One site was identified in an area for two separate natural disasters. The sites did not sustain damages from the disaster events. This information is informally tracked the by the environmental compliance group for purposes climate impact observations and for SSP reporting. A more formal approach may be established in the future as part of the site plan and or vulnerability assessment process.

6. The barriers that LM currently faces with regard to climate change adaptation include competing site management priorities with limited time and resources; lack of specific DOE management directives that require climate considerations to be included in day-to-day decision making; determining how best to implement the general DOE directives that include climate change (i.e., manual, procedure, and policy updates) into the LM framework; and lack of practical application experience. Funding and other resources may become an important consideration for LM with regard to the site screening requirements identified in the new Secretarial Memo.
7. At this time only a select number of employees have received climate science and resilience training. Several federal and contractor employees have been exposed to training through various conferences and working groups. Two employees attended the introductory climate training provided by the Association of Climate Change Officers. Certain LM managers reviewed the executive training slides that were circulated earlier in 2015. LM does not currently provide formal climate science/resilience training as part of the standard employee training curriculum.
8. The LM workforce needs additional climate science and resilience training (e.g., LM management training, more specific training for technical site management leads, and a general awareness training for all employees).
9. LM has not yet identified specific climate-related supply chain risks. A Climate Change Adaptation team member attended the EPA Center for Corporate Climate Leadership webinar, "Improving Environmental Sustainability in Supply Chains: Best Practices" and these risks are being evaluated at the staff level. Some climate change risks have been identified and additional studies are being conducted to determine how to manage these risks (e.g., long-term disposal cell cover performance, changes in groundwater that could affect groundwater contamination remedies).
10. LM designated the Environmental Program Management manager and the EMS Climate Change Adaptation team advocate to oversee climate resilience efforts along with their other responsibilities. The LMS contractor designated approximately five employees as Climate Change Adaptation team support members in addition to their primary duties. As a result of the Secretarial Memo, LM will designate of a senior management official to oversee climate change resilience efforts.

11 Budget and Funding

11.1 Overall Status

LM uses a multi-year sustainability budgeting plan to identify funds needed to approve projects in a timely manner and to facilitate data collection for multiple budget requests. With a 5-year look-ahead, LM identifies major sustainability goals and related activities (e.g., water and energy evaluations, annual reporting events, data tracking) and projects that will be necessary to achieve

and track goals. LM funds long-term sustainability projects in its site-specific budgets. The sustainability teams identify project costs for the sustainability budget and other related budget calls.

A cutout from the spreadsheet is shown below:

Goal	2018 [$K]	2019 [$K]	2020 [$K]	2021 [$K]	2022 [$K]
Greenhouse gas emissions	508.1	515.0	513.5	519.6	521.1
High Performance Sustainable Buildings	1269.6	871.3	173.1	174.9	175.4
Vehicle and Fleet	55.1	56.9	56.3	56.9	57.1
Water Conservation	70.9	72.9	73.6	73.2	73.4
Pollution Prevention	92.6	93.5	94.5	95.6	95.9
Sustainable Acquisition	83.1	84.0	84.9	85.9	86.2
Electronic Stewardship	66.0	66.7	67.4	68.2	68.4
Renewable Energy	76.6	77.4	78.2	79.1	79.3
Climate Change Adaptation	84.1	84.9	85.8	86.8	87.1

LM's major sustainability efforts and funding have been related to energy efficiency and RE. 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. LM selects projects primarily by evaluating life-cycle costs. The projects' initial goals include having a payback time that is 25 years or less. Energy team members will coordinate with task assignment managers, site leads and managers, and engineering staff to develop projects. LM accounting and technical staff review the most promising proposals in-depth.

LM will continue to 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, trailers, and as well as other structures and facilities.

11.2 Success Stories, Accomplishments, Lessons Learned, and Best Management Practices

LM plans budgets for the EMS, including sustainability, and specific EMS projects for 5 outyears. During the process, LM identifies the major sustainability goals and related activities (e.g., water audits or annual reporting events) and specific projects. Sustainability team leads coordinate with LM budget specialists during their life-cycle baseline budgeting, to include sustainability figures. To account for funding changes, sustainability team leads and LM budget staff review costs and develop budgets for site-identified tentative projects as well as selected projects beyond the 5-year window.

During the life-cycle baseline budget process, sustainability project spreadsheets are developed and used to report sustainability budget numbers. The spreadsheet includes a column that identifies projects that have not yet been scheduled or that extend beyond the 5-year window.

This allows flexibility in moving projects from one fiscal year to another as available funding changes.

Return-on-investment reviews are conducted 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. An example of a return-on-investment review for a previous project is provided below:

Weldon Spring, MO, Site Interpretive Center - Potable Water Fixture Replacement

Year	Inflation Rate, %	Yearly Cost, $	Yearly Savings, $	Inflated Yearly Savings, $	Discount Factor	Present Value of Costs, $	Present Value of Savings, $	Water Savings, gal/yr
1	2%	21,935	-		0.9346	20,500	-	
2	2%		1,284.3	1,336	0.8734	-	1,167	134892
3	2%		1,284.3	1,363	0.8163	-	1,113	134892
4	2%		1,284.3	1,390	0.7629	-	1,061	134892
5	2%		1,284.3	1,418	0.7130	-	1,011	134892
6	2%		1,284.3	1,446	0.6663	-	964	134892
7	2%		1,284.3	1,475	0.6227	-	919	134892
8	2%		1,284.3	1,505	0.5820	-	876	134892
9	2%		1,284.3	1,535	0.5439	-	835	134892
10	2%		1,284.3	1,566	0.5083	-	796	134892
11	2%		1,284.3	1,597	0.4751	-	759	134892
12	2%		1,284.3	1,629	0.4440	-	723	134892
13	2%		1,284.3	1,661	0.4150	-	689	134892
14	2%		1,284.3	1,695	0.3878	-	657	134892
15	2%		1,284.3	1,728	0.3624	-	626	134892
16	2%		1,284.3	1,763	0.3387	-	597	134892
17	2%		1,284.3	1,798	0.3166	-	569	134892
18	2%		1,284.3	1,834	0.2959	-	543	134892
19	2%		1,284.3	1,871	0.2765	-	517	134892
20	2%		1,284.3	1,908	0.2584	-	493	134892
Total Present Value						20,500	14,914	
Net Present Value							(5,586)	
Total Gallons of Water								2,562,948
Years to pay back investment							17.08	

Assumptions:

7%		Nominal discount rate per OMB Circular A-94
2%		Inflation rate per Federal Reserve

Comments:

Sustainability Return on Investment (SROI): Measures cash and non-cash benefits to society as a whole and looks at economic, social, and environmental performance.

The Economic Return On Investment shows a relatively low Present Value of Savings; however, the amount of water savings in terms of gallons per year is substantial to the Weldon Spring, Missouri site. The Weldon Spring, MO Site is the third largest potable water consumer LM-wide (in terms of the Water Conservation Program Goal Metrics Sites).

The decrease in potable water consumption simultaneously provides a decrease in heating costs of providing hot water, and potentially decreases the costs associated with the onsite waste water treatment system, as well.

The Environmental Return on Investment is positive in that the project will decrease consumption of water (a natural resource); decrease energy required to heat water for hot water usage, with a subsequent decrease in greenhouse gases and air contaminates associated with energy production and supply; and a decrease in wastewater to the environment.

The Social Return on Investment is positive in that the project will provide valuable information on the water conservation benefits to the employees and the public. At the Weldon Spring, Missouri, Site, an Interpretive Center is open to the general public and is visited by approximately 24,000 visitors per year. Customized field trips are provided for students in kindergarten through 12th grade. Additionally, the staff conducts outreach presentations for organizations that do not have funding to travel to the Interpretive Center. The upgrade will provide the Weldon Spring site personnel the opportunity to educate the many people on the benefits of water reduction.

LM also works closely with adjacent landowners and other government agencies to minimize cost, protect the environment, and achieve sustainability goals; collaborative action is taken wherever possible. This includes construction and maintenance of roads, bridges, trails, signs, fences, weed and animal control, and other common land-management aspects.

11.3 Site-Specific Measurable Goals and (3–5) Milestones

LM will do the following:

- 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. We are evaluating, and expect to further apply, 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.
- 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 in 2017.
- Continue to examine reinvestment potential to use cost savings realized from sustainability efforts.

12 LM's People and Processes

12.1 Environmental Management System

LM's EMS comprehensively incorporates life-cycle environmental considerations into all aspects of the LM mission. The EMS helps LM use its finite resources wisely, minimize wastes and adverse environmental impacts, and comply with the laws, regulations, DOE requirements, and other applicable requirements that protect the environment, public and worker health, and resources. The EMS enables LM to implement sustainable environmental stewardship practices that enhance the protection of air, water, land, and other natural and cultural resources affected by DOE operations. Implementing the EMS is integral to LM's mission and to achieving excellence in environmental stewardship.

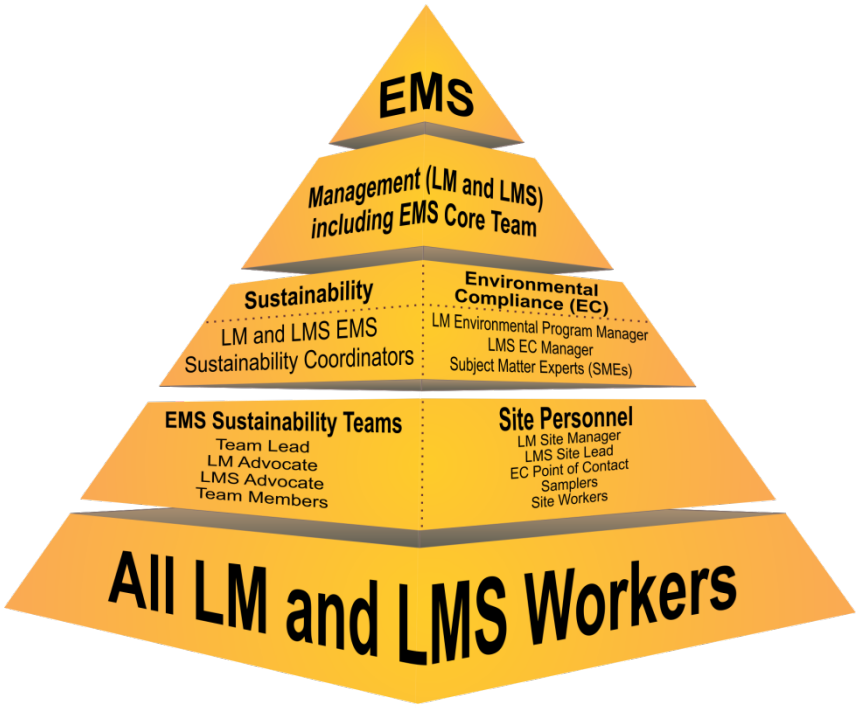


Figure 6. EMS Structure

LM's EMS is graphically displayed as a pyramid in Figure 5 above. It is a joint program between LM and its prime contractor for the LMS contract and has two areas of focus: environmental compliance and environmental sustainability. The EMS is an established structure with senior management sponsorship, coordinators, sustainability team involvement, and the environmental compliance group.

The EMS Core Team includes representatives from applicable programs and projects from LM and LMS contractor management. Their responsibilities include the following:

- Overseeing the development and implementation of the sustainability teams related to sustainability requirements
- Approving sustainability goals and targets
- Functioning as the steering committee for management-level decisions

In 2016, LM initiated efforts to stand up a new sustainability team (Ecosystem Management) to support federal initiatives regarding ecological health, conservation, land reuse, and land management. The team will promote (1) conservation use of LM lands in accordance with national strategies and guidance, (2) collaboration with other agencies and organizations to implement regional conservation initiatives, (3) development of sustainable legacy waste remedies, and (4) communication of ecological information.

In 2016, the LM EMS team continued implementing actions to achieve goals as set in DOE Orders and EOs. Progress on activities related to environmental, energy, and transportation management is evaluated and reported quarterly.

The sustainability activities are co-orchestrated by sustainability coordinators, one from LM and one from the LMS contractor. Responsibilities of the sustainability coordinators include overseeing the implementation and continual improvement of the EMS, actively participating in the EMS Core Team, reporting progress to management, conducting management reviews, facilitating management involvement in the EMS, and generating end-of-year reports.

Each sustainability team consists of a team lead, an LM advocate, an LMS contractor senior management advocate, and several other LM and LMS employees. Each team does the following:

- Manages and implements its individual sustainability objectives and coordinates with other teams on crosscutting goals.
- Updates their respective sections within:
  - EMS Sustainability Awareness training
  - The EMS Sustainability Teams Manual
- Updates and presents goal-specific presentations to senior management once a year, with open invitations to others within LM.
- Provides awareness articles at least once every 2 years that are published in the internal quarterly newsletter, *ECHOutlook*. Related posters, contests, and activities sometimes accompany the articles.
- Provides area specific input into required reports (SSP, EISA 432, etc.).

The LM Environmental Program Management (EPM) manager and the LMS EPM manager are the primary points of contact for the environmental compliance portion of the EMS, and for requesting adequate funding to support anticipated EMS activities. The environmental compliance aspect of the EMS consists of regulatory compliance and monitoring programs that implement federal, state, local, and tribal requirements, agreements, and permits. The LMS Environmental Compliance group is integrated into program and project implementation from planning through completion to help ensure activities are performed so that the safety of the public and protection of the environment is maintained.

The LM sustainability side of the EMS, with its comprehensive approach to fulfilling sustainability goals, advances the DOE sustainability mission with a diverse approach and a concentrated effort toward the goals of 2017 and beyond. To achieve the goals, LM will coordinate with its EMS Core Team, sustainability teams, the environmental compliance group, and the LM operations and maintenance staff. In addition, LM will enlist the technical expertise of its scientists and engineers to enable LM to operate sustainably and in compliance with requirements. This fostering of sustainable operations will include continued emphasis on behavior change. In 2016, LM initiated efforts to stand up a new sustainability team (Ecosystem Management) to support federal initiatives regarding ecological health, conservation, land reuse, and land management. The team will promote (1) conservation use of LM lands in accordance with national strategies and guidance, (2) collaboration with other agencies and organizations to implement regional conservation initiatives, (3) development of sustainable legacy waste remedies, and (4) communication of ecological information.

Sustainability team members provide updates via presentations to management, and the Core Team meets as needed. The EMS Environmental Compliance group meets weekly, provides monthly status reports, provides quarterly reports on changing requirements, and annually assembles the *Office of Legacy Management's Summary of Annual Site Environmental Reports*. The annual EMS Management Review allows upper management to assess the strengths and weaknesses of the EMS, and provides them with information that helps them make decisions affecting the future of the EMS. LM uses this SSP to report on the status of planned activities to meet sustainability goals.

The EMS Training Team provides and coordinates the EMS General Awareness training updates within the 2-year refresher period. The EMS Communications Team works with the other sustainability teams to produce the awareness articles, which are published in the internal quarterly newsletter *ECHOutlook* at least once every 2 years. Related posters, contests, and activities sometimes accompany the articles to encourage behavioral changes.

The LMS contractor Quarterly Performance Assurance Measures and Quarterly Environmental Program Management reports encompass the sustainability teams and compare the status of their activities against the goals LM established in accordance with the requirements and directives. The reports include both environmental sustainability and environmental compliance information on significant activities that have occurred during the preceding 90 days, the status of projects compared to identified target dates, and activities planned for the next 90 days.

13 References

DOE *Climate Change Adaptation Policy Statement*, June 30, 2014

DOE Order 430.1C, *Real Property Asset Management*, August 19, 2016

DOE Order 436.1, *Departmental Sustainability*, May 2, 2011

DOE *FY 2015 Consolidated Energy Data Report (CEDR) Technical Support Document*, September 18, 2015

DOE guidance document Practical Strategies for Climate Change Vulnerability Assessments

DOE Guide 436.1-1, *Federal Sustainable Print Management*, November 17, 2015

DOE Policy 450.4A, *Integrated Safety Management Policy*, April 25, 2011

DOE Strategic Sustainability Performance Plan, 2016

Energy Independence and Security Act of 2007 (EISA) Section 432, Title 42 *United States Code* Section 8253[f] (42 USC 8253[f])

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

Energy Policy Act of 1992, PL 102-486

EO 13653, *Preparing the United States for the Impacts of Climate Change,* November 1, 2013

EO 13693, *Planning for Federal Sustainability in the Next Decade*, March 19, 2015

Former Secretary of Energy Dr. Steven Chu, "Management of Fleet Inventory," Memorandum for Under Secretaries, Office of Management (Headquarters Fleet), Power Marketing Administrations (PMAs) and Headquarters Fleet Managers, Sustainability Performance Office, January 27, 2011

PL 95-619. "National Energy Conservation Policy Act of 1978," Public Law.

LM Documents

LM Policy 436.1B, *Environmental Policy*, November 23, 2016

LM *Site Management Guide (Blue Book),* January 2016

LM 2016–2025 Strategic Plan, DOE/LM-1477*,* May 2016

LMS Documents

Applied Studies and Technology (AS&T) Program Guidance to Identify, Select, and Monitor Applied Studies, S12452

Comprehensive Emergency Management System, LMS/POL/S04326, continually updated, prepared by Navarro Research and Engineering, Inc., for the U.S. Department of Energy Office of Legacy Management.

Communication Model for Applied Studies & Technology (AS&T) Program, LMS/ESL/S13220

Environmental Management Systems 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.

Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies, LMS/PLN/S12185

Navarro Safety and Environmental Policy Statement, February 25, 2016

Personal Property Management Manual, LMS/POL/S04336, continually updated, prepared by Navarro Research and Engineering, Inc., for the U.S. Department of Energy Office of Legacy Management.

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III. Fleet Management Plan

To address recommendations in the pending U.S. Department of Energy Inspector General Audit report, *The Department's Fleet Vehicle Sustainability Initiatives*, the Office of Legacy Management has summarized its site-level policies and procedures for the management of its fleet inventory, including fuel and vehicle acquisition and fleet inventory optimization. The Legacy Management Support contractor's *Fleet Management Plan* is provided in Attachment D.

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Attachment A

LM Environmental Policy

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U.S. DEPARTMENT OF ENERGY
Legacy Management

Procedure: 436.1B

Effective: 11/23/2016

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.

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: Thomas C. Pauling
Acting Director
Office of Legacy Management

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Attachment B

Sustainability Dashboard Excluded Building List and Certification Letter

(FY 2016 Excluded Building List report generated on December 1, 2016, for self-certification)

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Property Name	Property ID	Real Property Unique ID	Property Type	Gross SqFt	Excluded Facilities SqFt	Exclusion Part	Exclusion Justification Comment
DELTA BUILDING	FER-BLDG-OFFICE	203707	Building	10408	10408	C - Fully serviced lease	Lessor pays all utilities
RTC LEASE-BUILDING12	GJO-BLDG-B12	208138	Building	11753	11753	C - Fully serviced lease	Fully serviced lease
RTC LEASE-BUILDING2	GJO-BLDG-B2	208140	Building	2263	2263	C - Fully serviced lease	Fully serviced lease
RTC LEASE-BUILDING32	GJO-BLDG-B32	208137	Building	4741	4741	C - Fully serviced lease	Fully serviced lease
RTC LEASE-BUILDING810	GJO-BLDG-B810	204554	Building	23206	23206	C - Fully serviced lease	Fully serviced lease
RTC LEASE-BUILDING938	GJO-BLDG-B938	208135	Building	19182	19182	C - Fully serviced lease	Fully serviced lease
RTC LEASE-BULDING 46	GJO-BLDG-B46	211272	Building	3890	3890	C - Fully serviced lease	Full serviced lease
RTC LEASE-LOG CABIN	GJO-BLDG-CABIN	216249	Building	3231	3231	C - Fully serviced lease	Fully serviced lease
STORAGE SHED BUILDING 2A	GJO-BLDG-STORSHED	207408	Building	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
STORAGE SHED	MNT-BLDG-STORSHED	208390	Building	260	260	D - Essentially only lighting	Shed only uses minimal lighting. Shared meter.
STAR CTR OFFICE PORTION OF LEASE	PIN-BLDG-OFFICE	143457	Building	1330	1330	C - Fully serviced lease	Fully serviced lease
EQUIPMENT STORAGE SHED	RFS-BLDG-EQUIPSTOR	140115	Building	1118	1118	D - Essentially only lighting	Solar panels provide power to lights only inside structure.
STORM SHELTER	WEL-BLDG-STORMSHELTR	215411	Building	560	560	D - Essentially only lighting	Solar panels provide power only to lights inside structure.
STORM SHELTER 2	WEL-BLDG-STORMSHLTR2	216164	Building	560	560	D - Essentially only lighting	Solar panels provide power only to lights inside structure.
WESTMINSTER OFFICE SPACE LEASE	WST-BLDG-OFFICE	204031	Building	19010	19010	C - Fully serviced lease	Fully serviced lease
SINGLE WIDE TRAILER - ERSP	RFO-TRLR-ERSP	207375	Trailer	672	672	B - Privately owned	Rental agreement

Department of Energy
Washington, DC 20585

DOE BUILDING EXCLUSION
SELF-CERTIFICATION FORM
FY 2016
FOR THE ENERGY INTENSITY GOAL OF EISA 2016

FROM: Office Legacy Management

TO: Sustainability Performance Office

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

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

I certify that the buildings listed on the Excluded Buildings List created from the Sustainability Dashboard Facility Goal Category Excluded Building Report dated November 30, 2016, for Office of Legacy Management (attached) 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

BUDIMIR SOKOLOVICH
2016.12.02 14:15:49
-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 (rc grand junction)

LM20\Ribeiro\11-29-16 2016 SSP Guidance Memo.docx

Attachment C

Water Management Plan

This attachment is a section out of the EMS Sustainability Teams Manual, which is scheduled to be updated to EO 13693 in the first quarter of calendar year 2017, 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 D

Fleet Management Plan

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LMS/POL/S11157-3.0

Fleet Management Plan

U.S. DEPARTMENT OF ENERGY | Legacy Management

This document has been designed for online viewing.

Fleet Management Plan
Document History

Version No./ Revision No.	Revised	Description of Change
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.

Approved:

Russel Edge

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Abbreviations

AFV	alternative fuel vehicle
CFR	*Code of Federal Regulations*
DOE	U.S. Department of Energy
E85	85% ethanol fuel blend
EMS	Environmental Management System
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* outlines the U.S. Department of Energy (DOE) Office of Legacy Management's (LM) fleet management strategies. This plan, in conjunction with the *Environmental Management System Sustainability Teams Manual* (LMS/POL/S11374) and the 2017 LM Site Sustainability Plan, detail LM's planned activities for meeting sustainability goals defined in federal law, including Executive Orders such as Executive Order 13693, *Planning for Federal Sustainability in the Next Decade*, Presidential Memorandums, DOE guidance documents such as the Strategic Sustainability Performance Plan, and DOE Order 436.1, *Departmental Sustainability*, and DOE Fleet Management Handbook (Sept 2016). These regulatory documents help LM perform appropriate fleet management consistent with DOE and federal government policies.

LM utilizes 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 prime contractor for the Legacy Management Support contract. 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 and is responsible for fleet-related goals.

Note

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

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

The DOE Office of Legacy Management and its Legacy Management Support (LMS) contractor's Fleet Management team is centrally located at the LM office in Grand Junction, Colorado. From this location, the team supports the mission tasks and manages fleet vehicles at eight occupied locations. These vehicles are used to accomplish the ever-expanding LM mission of long-term surveillance and maintenance of current legacy sites (i.e., those identified in Appendix A of LM's *Site Management Guide* [Blue Book; DOE 2016]), future legacy sites (i.e., those identified in Appendix B of the Blue Book), and other LM-mission activities (i.e., maintenance of calibration models and the DOE Uranium Leasing Program).

LM's fleet consists predominantly of U.S. General Services Administration (GSA) leased vehicles, with the exception of one LM-owned vehicle at the Fernald, Ohio, Site that is used to transport and operate one piece of truck bed-mounted Geoprobe drilling equipment. LM's current fleet structure is outlined below in Table 1.

Table 1. LM Fleet Structure

Fleet Garaging Location	Number of Vehicles[d]
Fernald, Ohio, Site	10[a] 1 owned[a, d]
Grand Junction, Colorado, Office	10[b] 4[a, e]
Monticello, Utah, Disposal and Processing Sites	1[c]
LM Business Center in Morgantown, West Virginia	1[c]
Pinellas County, Florida, Site	1[c]
Tuba City, Arizona, Disposal Site	1[c]
Weldon Spring, Missouri, Site	1[c]
LM Office in Westminster, Colorado	8[a, e]
Total	38[e]

Notes:

[a] With prior LM approval, the site leads assign their 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.

[b] Due to the large number of sites that the Grand Junction office supports, it is necessary to pool vehicles to allow for appropriate support using the minimum amount of vehicles possible.

[c] At all manned sites with only one assigned vehicle, the vehicles are needed to support the mission tasks of that site on a daily basis. These tasks cannot be effectively accomplished by the use of a Grand Junction office pooled vehicle due to distance to the garaging location. The garaging location is the place 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, 2016.

2.0 Vehicle Acquisition

2.1 Choosing a Vehicle

Vehicle replacements are chosen based on a like-for-like practice, or as mission changes dictate, and are based on GSA guidelines. LM plans for 75 percent of acquisitions of all new and replacement light-duty vehicles to be alternative fuel vehicles (AFVs) by 2015 and each year thereafter per Executive Order 13693. When LM leases new GSA vehicles, a list of minimum mission requirements for the requested vehicle is provided to GSA (with the LM fleet manager's approval). GSA obtains a vehicle that matches LM's request as closely as possible and while also meeting the requirements for safety and the LM mission.

There are three tools at the fleet's disposal to address vehicle resource needs at the least cost possible.

If:

- A rental vehicle or equipment, i.e., construction or other non-fleet vehicle, is needed for less than 60 days and when not traveling more than 60 miles from the garaging location, LM could use the Short Term Rentals program offered by GSA.
- The vehicle will travel further than 60 miles and is needed for 1–4 months, then GSA offers a temporary lease vehicle to fill temporary vehicle resource needs. These vehicles are used and may show some wear and tear. A minimum of 2–3 month lead time is adequate to be

able to provide temporary leased vehicle resources. Unless waived by LM senior management, this resource tool will be used to determine if there is enough miles driven or overall utilization to justify the need of an additional fleet vehicle.

- Leased vehicles are unavailable through GSA, then 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.

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 excess costs for 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 and when available, and if unavailable, LM will acquire E85 (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

When leasing vehicles through GSA, approval by the LM fleet manager, the LM fleet manager's senior approving manager, DOE Headquarters industrial fleet manager and GSA's HQ Acquisition Department is required. When adding specialized accessory equipment to the leased vehicles, the only approval that is required is that of the LM fleet manager and GSA.

3.0 Fuel Infrastructure

3.1 Impact on Acquisition Strategy

Vehicles compatible with E85 flex fuel or that are low greenhouse gas emitters are obtained whenever possible for all light-duty vehicles in accordance with Executive Order 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. 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 supports. Future consideration to lease AFVs will be based upon changes in local infrastructure.

4.0 Vehicle Use and Policies

4.1 Education

GSA requires that all GSA vehicle drivers take the one-time training course HS161, NSC (National Safety Council) Defensive Driver Training, before driving a GSA vehicle. In addition, all contractors are required to take the EC100, Environmental Management System (EMS) General Awareness, and GSA101, GSA 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 DOE 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 prior to driving 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.

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 Pinellas County, Florida, Site; and the LM Business Center in Morgantown, West Virginia—fall under the responsibility of the respective LM site managers. The LM site managers, who are critical to the LM mission being accomplished at the individual sites, can delegate decisions on vehicle assignment and appropriate use of government-furnished vehicles to contractor management. The contractor managers can implement additional policies and allocate vehicles as they deem fit. Personnel at the LM office in Westminster, Colorado, and the Fernald 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 an authorization to perform a driver's background check, take the required training, and perform a pretrip inspection of the vehicle every time they operate the vehicle. 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) prior to departing.

4.3 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 and does not affect the occupants' safety and health. Vehicles should be run at an idle when operating direct-current-powered equipment and drill assemblies or when employee health and safety is 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.

4.4 Personal and Home-to-Work Use

LM's vehicle use policy for government-owned or leased vehicles only allows use for official activities that are for the accomplishment of the agency mission (Title 41 *Code of Federal Regulations* Section102-34.220 [41 CFR 102-34.220], "Federal Management Regulation"). This regulation applies to authorization for the federal employee's use of a government-furnished vehicle for home-to-work travel. Home-to-work travel is strictly prohibited unless that transportation has been approved in writing by the Secretary of Energy in accordance with the DOE Fleet Management Handbook and 41 CFR 109-38.3, "Official Use of Government Motor Vehicles." This authorization will only be granted when it is in the best interest of the government agency and is not contingent on the comfort of the employee. Greater reporting requirements will be enforced when authorizing home-to-work travel use of a government-furnished vehicle. This authorization must be renewed annually per LM.

4.5 Pooled, Assigned and Subpooled Vehicle Fleets

DOE and LM's policy on vehicle assignments is to pool fleet vehicles. There are two types of pooled vehicle environments that are used in LM, the Pooled Fleet and the Subpooled Fleet. No vehicles are assigned to individuals across LM. In a fully pooled environment the vehicles are available on an as-needed and when-available basis; such is the case at the Grand Junction office. In this scenario, drivers are required to reserve their vehicles in advance, load equipment into the vehicles prior to departing, and remove all equipment and trash when turning in the vehicle. Fully pooled fleets provide the greatest utilization of vehicles.

Vehicles assigned to teams of two or more have shown to be effective in the accomplishment of the mission with the least level of effort to the teams as possible when common tasks are being routinely performed. This scenario is called a subpooled vehicle assignment. This means that when a vehicle is not being used or is not in the field then it is available to be used by anyone in the office authorized to operate a motor vehicle on behalf of LM. It is the intent that this be accomplished through notification to the site fleet accountable property representative with oversight from the site lead and/or site manager and LM/LMS fleet manager.

Occasionally, subpooled vehicles will be made into fully pooled vehicles when inefficiencies occur or when the mission work requires it. 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.

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. LM and LMS contractor Fleet Management uses a continual evaluation methodology (e.g., telematics, asset management system, and GSA tools) to achieve the LM mission, identify fueling infrastructure for alternate 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 on the proper use of E85 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 and LMS contractor's 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 of LM's sites. Additionally, LM could realize increased savings by encouraging the use of electric golf carts, Gators or other brand utility vehicles, or other non-fleet electric vehicles when environmental factors and mission tasks allow.

LM has been vigilant in reducing unnecessary travel by encouraging videoconferencing and virtual presence technology for meetings whenever possible. Although LM has not eliminated the need to travel for all meetings and trainings, the staff has reduced the amount of travel by utilizing communication technology when it is available and feasible.

Alternative fuel use is required by law for fleets that contain alternative-fuel-capable vehicles. If the site has an active annual waiver from the requirement to fuel with alternative fuels, then that site is exempt from this requirement. Sites can be exempt from this requirement if it can be shown that alternative fuel is more costly than conventional gasoline or if the distance to the nearest fueling station providing the alternative fuel is more than a 15-minute drive time or a 5-mile radius from the garaging location. However, LM's policy is to fuel with alternative fuels whenever possible and with minimal effort regardless of whether there are waivers in place or not. This effort positively contributes toward overall agency 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 E85 during non-rush-hour times.

DOE requires all fleet vehicles to be monitored for utilization in regards to use through records such as trip tickets or vehicle logs, telematic equipment showing date used; name of operator; destination; times of departure and return and mileage or hours of use. Utilization data will be used to determine continued leasing of the vehicle or possible return of the vehicle to GSA.

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*, May 2, 2011.

Environmental Management System Sustainability Teams Manual, continually updated, LMS/POL/S11374, 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 (Blue Book), U.S. Department of Energy Office of Legacy Management, Update 18, January 2016.

Strategic Sustainability Performance Plan, annually updated, U.S. Department of Energy.

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Attachment E

Ecosystem Management

2016 Ecological Studies

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The Office of Legacy Management (LM) continued four long-term cover performance studies in 2016:

- Effects of Soil-Forming Processes on Cover Engineering Properties: On the Falls City, Texas, Disposal Site and Bluewater, New Mexico, Disposal Site cells, Legacy Management Support (LMS) contractor researchers collaborated with university scientists, consultants, and a U.S. Nuclear Regulatory Commission (NRC) researcher to determine if natural soil morphological development in cell covers is affecting radon flux and water percolation (and hence, affecting the protectiveness of the cover). In total, 15 soil pits were excavated, and hundreds of radon flux and soil samples were collected for analysis.
- Contaminant Uptake by Plants on Disposal Cells: An LMS ecologist, University of Arizona graduate student, and several university professors collaborated to determine if plants growing on disposal cell covers create exposure pathways by taking up and disseminating tailings constituents through animals foraging on stems and leaves. The graduate student completed statistical analyses for uranium, radium, and other elements of concern in leaf and stem tissues and completed a review of cultural and medicinal uses of these plants by Native Americans.
- Water Balance Cover Monitoring: Researchers have discovered that alternative cover designs, called evapotranspiration (ET) covers (or water balance covers), may provide a sustainable alternative to traditional NRC cover designs—involving compacted soil barriers and rock—with respect to controlling percolation. In 2016, an LMS ecologist and collaborators continued monitoring a 3-hectare lysimeter on the Monticello, Utah, Disposal and Processing Sites cell and changes in vegetation. The monitoring continues to provide convincing evidence that the ET cover onsite has performed well in limiting percolation.
- Enhanced Cover Assessment Project: The objectives of this study are to record and analyze data on the long-term performance of disposal cell covers and explore and advance innovative technical approaches that improve the long-term sustainability of environmental remedies. In 2016, LMS researchers and collaborators (1) monitored revegetation and lysimeter percolation at the Grand Junction, Colorado, test site; and (2) published a paper on the results of an earlier cover soil manipulation study on the test site.

LM implemented or continued five enhanced natural attenuation studies in 2016. The studies are applications of new, potentially more sustainable, and cost-effective technologies for residual soil and shallow groundwater contamination at arid and semiarid LM sites.

- Tuba City, Arizona, Disposal Site Evapotranspiration: The purposed of this study is to provide a landscape-scale estimate of evapotranspiration for input to the groundwater flow model for the Tuba City disposal site. Researchers completed the final report for this study, entitled "Evapotranspiration Dynamics and Effects on Groundwater Recharge and Discharge at the Tuba City, Arizona, Disposal Site," and published an associated journal article in *Journal of Arid Environments* in 2016.
- Shiprock, New Mexico, Disposal Site Phytoremediation—Hydraulic Control: The goal of the Shiprock disposal site phytoremediation pilot study is to establish vegetation that can transpire shallow groundwater and thereby help control dispersion of groundwater contamination. The study is designed to evaluate the feasibility of enhancing natural phytohydraulic control by planting native phreatophytic shrubs. In 2016, researchers completed data analysis and drafted a report, "Growing Desert Phreatophytes for Hydraulic

Control of Groundwater at the Shiprock, New Mexico, Disposal Site: Interim Pilot Study Report."

- Monument Valley, Arizona, Processing Site Subpile Soil Phytoremediation: LM conducted a suite of pilot studies designed to evaluate, on a landscape scale, proposed passive and active remedies for ammonium, nitrate, and sulfate in the alluvial aquifer and in a source area at the Monument Valley site. The pilot studies focused on passive remedies as alternatives to active pump-and-treatment technologies. In 2016, researchers published a journal article in *Land Degradation and Development* entitled "Phytoremediation of a Nitrogen-Contaminated Desert Soil by Native Shrubs and Microbial Processes."
- Monument Valley, Arizona, Processing Site Land-Farm Phytoremediation: LM proposed land farming as an alternative to the traditional pump-and-treatment approach for nitrate and ammonia in the Monument Valley alluvial aquifer. The land-farm pilot study involved irrigating crops of native shrubs with nitrogen-contaminated groundwater pumped from the alluvial aquifer. In 2016, researchers obtained funding to prepare and publish a final report summarizing the study results.
- U.S. Geological Survey (USGS) Unmanned Aerial System (UAS) Evapotranspiration: This project, a collaboration with USGS and the University of Arizona, will use UASs to acquire high-resolution spectral data needed to estimate spatial and temporal variability in ET in floodplain ecosystems for input to groundwater flow evaluations. In 2016, researchers wrote a technical task plan for the study, selected study sites, and drafted a field work plan.

Attachment F

Explanation of Differences on Reporting

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Energy

Section 2.1.1.d. - Baseline Data

Facility Information Management System (FIMS) and Environmental Management System (EMS4) data was pulled to determine the gross square footage (GSF) for energy use in the baseline year (2003) for the Consolidated Energy Data Report (CEDR) data.

The Office of Legacy Management (LM) was created as an Office in the U.S. Department of Energy (DOE) at the end of 2003. Most (if not all) of the sites that came to LM during that first year were previously owned by other DOE Offices. LM does not have pre-2003 data for some sites, so it is not clear whether the information for the buildings and sites used in the baselines is correct and complete.

During the energy evaluation of the Fernald Preserve, Ohio, Site this year, LM discovered that the energy use of the Fernald Preserve offsite extraction wells was being excluded twice. In addition, LM discovered that the energy associated with the Parshall flume, part of the groundwater treatment system, was not being excluded. LM is requesting changes to both the 2014 and 2015 electricity-grid values.

The following tables below show the corrections in covered and excluded energy usage by quarter:

Corrected Excluded and Quarterly Covered Electrical Usage for 2014 Reported in the CEDR								
					2014 Revised CEDR		As Reported in 2014 CEDR	
Category	Subcategory	Usage Unit	Year	Qtr	MWh	BTU x 10^6	MWh	BTU x 10^6
Buildings	Electricity - Grid	Megawatt Hour	2014	1	1,095.968	3,739.443	882.738	3,011.902
Buildings	Electricity - Grid	Megawatt Hour	2014	2	1,225.867	4,182.658	992.894	3,387.754
Buildings	Electricity - Grid	Megawatt Hour	2014	3	766.146	2,614.090	641.548	2,188.962
Buildings	Electricity - Grid	Megawatt Hour	2014	4	173.850	593.176	138.192	471.511
Excluded	Electricity - Grid	Megawatt Hour	2014	1	415.013	1,416.024	628.243	2,143.565
Excluded	Electricity - Grid	Megawatt Hour	2014	2	432.993	1,477.372	665.966	2,272.276
Excluded	Electricity - Grid	Megawatt Hour	2014	3	112.200	382.826	236.798	807.955
Excluded	Electricity - Grid	Megawatt Hour	2014	4	722.564	2,465.388	758.222	2,587.053

Corrected Excluded and Covered Quarterly Electrical Usage for FY 2015 Reported in the CEDR								
					2015 Revised CEDR		As Reported in 2015 CEDR	
Category	Subcategory	Usage Unit	Year	Qtr	MWh	BTU x 10^6	MWh	BTU x 10^6
Buildings	Electricity - Grid	Megawatt Hour	2015	1	408.963	1,395.382	163.282	557.118
Buildings	Electricity - Grid	Megawatt Hour	2015	2	578.046	1,972.293	289.233	986.863
Buildings	Electricity - Grid	Megawatt Hour	2015	3	462.982	1,579.695	96.584	329.545
Buildings	Electricity - Grid	Megawatt Hour	2015	4	144.302	492.358	110.627	377.459
Excluded	Electricity - Grid	Megawatt Hour	2015	1	783.822	2,674.401	1,025.011	3,497.338
Excluded	Electricity - Grid	Megawatt Hour	2015	2	795.712	2,714.969	1,073.423	3,662.519
Excluded	Electricity - Grid	Megawatt Hour	2015	3	512.418	1,748.370	874.931	2,985.265
Excluded	Electricity - Grid	Megawatt Hour	2015	4	664.802	2,268.304	693.665	2,366.785

Abbreviations:
Btu = British thermal units
Qtr = quarter

Water

Section 4.1.1d - Baseline Data

FIMS data is uploaded into Dashboard to determine the GSF for annual reporting. According to DOE supplemental guidance, if a building or other facility is subject to both energy and water requirements, then LM will rely on the square footage value reported for the energy use of that facility.

The legacy sites that LM manages are atypical; there are buildings and other structures and facilities that contribute to the GSF values. Some of the structures may use:

- Energy but not water,
- Water but not energy,
- Both water and energy, or
- Neither water nor energy.

Therefore, the guidance to use the energy GSF for the water GSF can skew the data. For some sites, LM has been providing a GSF value associated with only the structures that actually use water, rather than simply copying the GSF reported for the energy use of that facility.

In 2007, DOE Headquarters used the high-performance and sustainable building square footage of 69,792 square feet for calculating energy usage. However, the FIMS data for 2007 noted the energy GSF to be 26,374 square feet for covered facilities. The discrepancies in these two square footages cause a significant difference in the Water Intensity (WI) percent change each reporting year, as compared to the 2007 baseline. Consequently, the calculated WI percent change noted in the Dashboard differs greatly from the percent change reported by LM in the *Site Sustainability*

Plan. Additionally, in 2016, the GSF used to calculate the potable WI is reported differently than the GSF used for energy in the Dashboard. This is a result of a change in criteria from the Sustainability Performance Office (SPO) regarding the calculation of the GSF for water.

In mid-2009, the SPO redefined fresh water to include non-potable fresh water, so LM included non-potable use in the overall, water use category. In 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 2009 non-potable use values from past reported potable use data.

Vehicle and Fuel Use Team

5.2.1.c and 5.2.1.d - Petroleum Usage – Baseline Data

It has been determined that all fuel reported in 2005 as E85 was in fact conventional fuel, but was reported incorrectly as E85. In 2005, consumed petroleum was reported as 27,213 gallons and E85 was reported as 4275 gallons. It was determined that there was no E85 fueling infrastructure in 2005 so all reported E85 was actually conventional fuel. The re-determined 2005 baseline for actual conventional fuel is 31,488 gal.

5.2.1.d – Reporting Inconsistencies – Dashboard vs. Site Sustainability Plan

The Dashboard reported performance of LM in response to fuel use goals in terms of gasoline gallon equivalent units instead of natural units. The percent changes and quantities of fuel will not appear to match correctly with the Site Sustainability Plan (SSP) since the SSP reports fuel usage as natural units.

5.3.1.d - E85 Fuel Usage - Baseline Data

Fuel data is pulled from the Federal Automotive Statistical Tool (FAST) for inclusion in the Dashboard. In 2005 (i.e., the baseline year), the guidelines for FAST were as follows: estimate the total amount of fuel used in your alternative fuel vehicle for the listed year. Include conventional fuel and diesel and any alternative fuels in the estimate. All fuel consumed in E85-capable vehicles was reported in FAST as E85 fuel. This shows as 4,275 gallons of E85 in the Dashboard. Based on LM tracking data, LM consumed zero gallons of alternative fuels in the baseline year of 2005. Therefore, the FAST data for the 2005 baseline is an erroneous overestimation, and comparison of subsequent years to the FAST baseline resulted in less of an increase. This occurs because when LM attempts to calculate changes in usage based on LM tracking data, the percentage calculations cannot be performed with zero as a denominator. To avoid this problem, LM uses a 2005 baseline of 1 gallon used to simplify the math.

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Attachment G

Commuter Survey

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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 onsite contractor (e.g., Navarro employee)
- ◯ Other (please specify)

No logic applied, all responses proceed to question number 3

3. Do you participate in any of the following work scheduling options? (Please select all that apply)

- ◯ 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
- ◯ None of the above

-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)
- ◯ Commuter Rail (e.g., regional)
- ◯ Intercity Rail (e.g., Amtrak)

-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)
- ◯ Commuter Rail (e.g., regional)
- ◯ Intercity Rail (e.g., Amtrak)

-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)
- Commuter Rail (e.g., regional)
- Intercity Rail (e.g., Amtrak)

-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

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Attachment H

Sustainability Dashboard Comprehensive Scorecard

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Comprehensive Scorecard

Under Secretary for Management & Performance
Office of Legacy Management
Legacy Management Sites
FY 2016 (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 2016): -22.0 %

Current Performance: -39%

	FY 2008	FY 2016	% Change
Facility Energy	5,357.1	3,538.8	-33.9%
Non-Fleet V&E Fuel	0.0	18.5	N/A
Fleet Fuel	293.5	214.1	-27.1%
Fugitive Emissions	0.0	0.1	N/A
On-site Landfills	0.0	0.00	N/A
On-site WWT	3.1	5.1	64.5%
Renewables	0.0	0.00	N/A
RECs	0.0	-321.7	-Infinity%
Total (MtCO2e)	**5,653.7**	**3,454.9**	**-38.9%**

Scope 3 Greenhouse Gas Emissions

Goal: Reduce indirect GHG emissions by 25 percent by FY 2025 relative to FY 2008 baseline

Interim Target (FY 2016): -7.0 %

Current Performance: -28%

	FY 2008	FY 2016	% Change
T&D Losses*	349.1	183.3	-47.5%
Air Travel	774.5	143.6	-81.5%
Ground Travel	145.2	91.1	-37.3%
Commute	838.5	1,018.1	21.4%
Off-site MSW	96.8	141.3	46.0%
Off-Site WWT	1.0	1.7	70.0%
Total (MtCO2e)	**2,205.1**	**1,579.2**	**-28.4%**

* 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 2016): -2.5 %

Current Performance: 5%

	FY 2015	FY 2016	% Change
Purchased Utilities (MMBtu)	5,594.9	5,779.9	3.3%
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**	**150,485.8**	**4.6%**

Waste

Electronics

Electronics Acquisition

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

Renewable Electricity

Goal: By FY 2025, use 30 percent renewable energy as a percentage of overall facility electricity use

Interim Target (FY 2016): 10 %

Current Performance: 45%

	FY 2016 Electricity Consumption	FY 2016 Renewable Electricity w/ Bonuses	% of Total
Grid Electricity	3,518	0.00	N/A
On-Site Renewable Energy	755	1,509	35.3%
Purchased Green Electricity	0	0.00	NaN%
Renewable Energy Certificates	N/A	402	9.4%
Total (MWh)	**4,273**	**1,911**	**44.7%**

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 2016): 10.0 %

Current Performance: 42%

	FY 2016 Energy Consumption	FY 2016 Clean Energy w/ Bonuses	% of Total
Grid Electricity	12,004	0.00	N/A
Non-renewable Thermal Energy	951	0.00	N/A
On-Site Renewable Energy	2,575	5,150	200.0%
Purchased Green Electricity	0	0.00	NaN%
Renewable Energy Certificates	N/A	1,371	NaN%
Total (MMBtu)	**15,531**	**6,521**	**42.0%**

Potable Water Intensity

Goal: Reduce potable water intensity by 36 percent by FY 2025 relative to FY 2007 baseline

Interim Target (FY 2016): -18.0 %

Current Performance: -66%

	FY 2007	FY 2016	% Change
Water Consumption (million gal)	1.5	0.3	-80.0%
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**	**7.4**	**-65.6%**

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 2016): -12.0 %

Current Performance: -98.0%

	FY 2010	FY 2016	% 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 2016): 15.0 %

Current Performance: 71.4%

	Building Count	GSF
Guiding Principles Certified	5	75,349
Total Applicable*	7	105,022
Performance (%)	**71.43%**	**71.75%**

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

EISA SCORECARD INFO WILL GO HERE

Fleet

Acquisition

Sustainable Acquisition

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

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 2016): -3.0 %

Current Performance: -3%

	FY 2014	FY 2016	% Change
Fleet Fuel GHG (MtCO2e)	228.6	214.1	-6.3%
Fleet Miles (x1000)	363.2	350.7	-3.4%
Greenhouse Gas Emissions / Mile (gCO2e/Mile)	**629.0**	**610.0**	**-3.0%**

Fleet Petroleum

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

Interim Target (FY 2016): -20.0 %

Current Performance: -13%

	FY 2005	FY 2016	% Change
Gasoline	27,213	18,513	-32.0%
Diesel	0	5,219	N/A
Biodiesel*	0	0	N/A
Total Petroleum (GGE)	**27,213**	**23,732**	**-12.8%**

* 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 2016): 10.0 %

Current Performance: -56%

	FY 2005	FY 2016	% Change
E-85	3,078	1,345	-56.3%
Biodiesel*	0	0	N/A
CNG	0	0	N/A
Other*	0	0	N/A
Total Alternative (GGE)	**3,078**	**1,345**	**-56.3%**

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

Municipal Solid Waste Diversion

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

Interim Target (FY 2016): 50.0 %

Current Performance: 30%

	FY 2016	%

Off-Site Landfills	147.5	69.8%
On-Site Landfills	N/A	N/A
Waste to Energy*	0.0	0.0%
Non-diverted Waste	***147.5***	***69.8%***
Diverted Waste	63.9	30.2%
On-site composted	0.0	0.0%
Off-site composted	0.0	0.0%
Total Diverted Waste	***63.9***	***30.2%***
Total Waste (metric tons)	**211.4**	**100.0%**

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

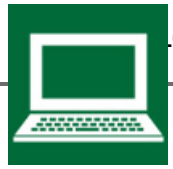
Construction & Demolition Diversion

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

Interim Target (FY 2016): 50.0 %

Current Performance: 97%

	FY 2016	%
Landfilled C&D Waste	0.1	2.8%
Diverted C&D Waste	3.1	97.2%
Total C&D Waste (metric tons)	**3.2**	**100.0%**



Interim Target (FY 2016): 95.0 %

Current Performance: 100%

	EPEAT Acquired	Total Acquired	%
Monitors	56	56	100.0%
Computers	149	149	100.0%
Imaging Equipment	5	5	100.0%
Televisions	0	0	N/A
Total Acquired	**210**	**210**	**100.0%**

Electronics Recycling

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

Interim Target (FY 2016): 100.0 %

Current Performance: 100%

	Amount	%
Transferred or Donated	1,808.018	46.7%
Recycled by Certified Recycler	2,063.390	53.3%
Recycled by non-Certified Recycler	0.000	0.0%
Amount disposed (e.g. landfill)	0.000	0.0%
Total Electronics Waste (metric tons)	**3,871.408**	**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 2016): 100.0 %

Current Performance: 100%

	Total Owned	PM Enabled	Exempt	%
Monitors	725	725	0	100.0%
Computers	535	505	30	100.0%
Total Items	**1,260**	**1,230**	**30**	**100.0%**

Duplex Printing

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

Interim Target (FY 2016): 100.0 %

Current Performance: 100%

	Total Owned	Duplex Enabled	Incapable	%
Total Printers	**69**	**39**	**30**	**100.0%**

Interim Target (FY 2016): 95.0 %

Current Performance: 100%

	Contracts Reviewed	Contracts Without Opportunity	Contracts Meeting All Requirements	%
Number of Contracts	**34**	**0**	**34**	**100.0%**