2020 LM Site Sustainability Plan

December 2019

U.S. DEPARTMENT OF ENERGY | Legacy Management

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2020 LM Site Sustainability Plan
Document History

Date	Description of Changes
December 2019	Updated to include fiscal year 2019 performance and fiscal year 2020 planned activities.
December 2018	Updated to include fiscal year 2018 performance and fiscal year 2019 planned activities.
December 2017	Updated to include fiscal year 2017 performance and fiscal year 2018 planned activities.

David S. Shafer, PHD for Peter O'Konski   12/9/2019

Peter O'Konski   Date
Deputy Director
Office of Legacy Management

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Attachments

Abbreviations

AFFECT	Assisting Federal Facilities with Energy Conservation Technologies
AFV	alternative fuel vehicle
AHS	All Hazards Survey
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers Inc.
AS&T	Applied Studies and Technology
Btu	British thermal units
CAS	Condition Assessment Survey
CAWWT	Converted Advanced Wastewater Treatment
C&D	construction and demolition
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DLA	Defense Logistics Agency
DOE	U.S. Department of Energy
DRUM	Defense-Related Uranium Mines
E85	ethanol fuel blend
ECM	efficiency and conservation measures
EI	energy intensity
EISA	Energy Independence and Security Act
EM	Emergency Management
EMS	Environmental Management System
EPA	U.S. Environmental Protection Agency
EPEAT	Electronic Product Environmental Assessment Tool
ERO	Emergency Response Organization
ESPC	Energy Savings Performance Contract
FAST	Federal Automotive Statistical Tool
FDCCI	Federal Data Center Consolidation Initiative
FEMP	Federal Energy Management Program
FIMS	Facilities Information Management System
FY	fiscal year
GHG	greenhouse gas
GP	Guiding Principles

GSA	U.S. General Services Administration
GSF	gross square feet
HEMSF	High-Energy Mission-Specific Facility
HPC	high-performance computing
HPSB	high-performance and sustainable building
HVAC	heating, ventilation, and air conditioning
IES	Illuminating Engineering Society
ILA	industrial, landscaping, and agricultural
ISO	International Organization for Standardization
IT	Information Technology
kBtu	thousands of British thermal units
kVA	kilovolt-amps
kWh	kilowatt-hours
LEED	Leadership in Energy and Environmental Design
LM	Office of Legacy Management
LMBC	Legacy Management Business Center
LMS	Legacy Management Support
MMBtu	million Btu
M&V	measurement and verification
MWh	megawatt-hours
N/A	not applicable
NPL	National Priorities List
OMB	U.S. Office of Management and Budget
OSF	Other Structure and Facility
PAE	Project or Activity Evaluation
PUE	power usage effectiveness
R2	Responsible Recycling
REC	renewable energy credit
RSF	rentable square feet
SF_6	sulfur hexafluoride
SOARS	System Operation and Analysis at Remote Sites
SOW	statement of work
SPO	Sustainability Performance Office
SSP	Site Sustainability Plan

USACE	United States Army Corps of Engineers
USC	*United States Code*
V&E	vehicles and equipment
WI	water intensity

1.0   Executive Summary

1.1 Summary of LM Progress Meeting SSP Goals

This Site Sustainability Plan (SSP) outlines the U.S. Department of Energy (DOE) Office of Legacy Management's (LM's) sustainability plans and summarizes LM's progress in meeting sustainability goals. The LM *2016–2025 Strategic Plan* (DOE LM-1477) outlines LM's strategies and goals to sustainably manage its legacy sites, land, and assets. LM achieves these goals by conserving resources, managing sites in accordance with applicable compliance obligations, implementing infrastructure improvements, and operating onsite renewable-energy-generating systems. This SSP was prepared in accordance with the DOE Sustainability Performance Office (SPO) *Fiscal Year 2020 Site Sustainability Plan Guidance* document.

LM embodies environmental stewardship excellence while performing its primary mission of managing DOE postclosure legacy sites. Overall, LM manages, maintains, or has an interest in 100 sites in 30 states and Puerto Rico. The histories of the legacy sites vary, as do the regulatory regimens under which the sites are managed. Examples of the regulatory frameworks include the Comprehensive Environmental Response, Compensation, and Liability Act; the DOE Defense Decontamination and Decommissioning Program; the Formerly Utilized Sites Remedial Action Program; the Resource Conservation and Recovery Act; and the Uranium Mill Tailings Radiation Control Act. Additionally, LM manages five radiometric calibration facilities; administers the Defense-Related Uranium Mines Program to verify and validate the condition of abandoned uranium mines on state and private land and on federal land managed by the U.S. Bureau of Land Management and the U.S. Forest Service; manages over 25,000 acres in Colorado that encompass the Uranium Leasing Program; retains records at the LM Business Center (LMBC**)** at 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 its carbon footprint at a programwide level as well as on a site-specific basis. To succeed at managing the large number of sites, LM employs comprehensive asset, information, data, and records management systems and integrates these systems with its 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 its mission. (See Attachment 1 for a copy of LM's *Environmental Policy* [LM Policy 436.1C]).

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. Two examples of outstanding environmental performance are: (1) LM was notified that the Fernald Preserve, Ohio, Site won the U.S. Environmental Protection Agency's (EPA's) second annual "National Federal Facility Excellence in Site Reuse" award for the National Priorities List (NPL) category and (2) LM was awarded the Electronic Product Environmental Assessment Tool (EPEAT) Purchaser Award for the third year in a row.

Note

LM operates its EMS jointly with the Legacy Management Support (LMS) contractor, and both place a priority on sustainability while executing the LM mission and achieving the LM goals. In this document, a reference to "LM" represents both LM and the LMS contractor (LM's strategic partner) unless specifically noted otherwise.

As identified in the LM *2016–2025 Strategic Plan*, LM has multiple overarching goals. Underlying these overarching goals are LM's triple-bottom-line activities that focus on social responsibility, economic prosperity, and environmental stewardship. For social responsibility, LM focuses on both communication with and the safety of staff and the public. For economic prosperity, LM promotes business excellence by being fiscally responsible and using best business practices. For environmental stewardship, LM consults with regulatory agencies and other stakeholders regarding its compliance with environmental laws, regulations, and agreements; its support of environmental justice; and its general consideration of the environmental impacts of all work being performed.

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

1.2   Summary Table of Goals/Targets

LM's reporting consists of both the fiscal year (FY) 2019 performance data entry in the DOE Sustainability Dashboard, hereafter referred to as the Dashboard, and this FY 2020 SSP (see Table 1).

Note

Not applicable (N/A) is marked where the previous year's goal is not addressed in this year's SSP Guidance document.

Table 1. Goal Summary Table

Prior DOE Goal	Current Performance Status	2-Year Performance and Plans	5-Year Performance and Plans	10-Year Performance and Plans
Energy Management				
30% energy intensity (Btu per gross square foot) reduction in goal subject buildings by FY 2015 from a FY 2003 baseline and 1.0% YOY thereafter.	LM did not meet this goal. LM's FY 2019 EI increased 59% from FY 2018. EI was affected by the reduction in square footage for goal subject buildings, which reduced the denominator for the EI calculation. Building 7 at the LM office at Grand Junction was removed from the goal subject buildings.	LM will continue to pursue projects that will further reduce its EI, including replacing current grid electricity with renewable sources and purchasing bundled electricity where it is cost-effective.	The number of buildings LM is responsible for changes as sites transition in or out of its purview. LM will evaluate impacts to EI as there are changes to the buildings LM is responsible for, and LM will take steps to decrease EI and pursue the purchase of bundled green energy as needed.	The number of buildings LM is responsible for changes as sites transition in or out of its purview. LM will evaluate impacts to EI as there are changes to the buildings LM is responsible for, and LM will take steps to decrease EI and pursue the purchase of bundled green energy as needed.
EISA Section 432 continuous (4-year cycle) energy and water evaluations.	LM met this goal. Scheduled energy evaluations were performed at the Grand Junction, CO, Disposal Site and the Pinellas County, FL, Site, and water evaluations were performed at the Tuba City, AZ, Disposal Site.	Continue the 4-year cycle of conducting energy and water evaluations on appropriate buildings. LM expects to achieve this goal.	Continue the 4-year cycle of conducting energy and water evaluations on appropriate buildings. LM expects to achieve this goal.	Continue the 4-year cycle of conducting energy and water evaluations on appropriate buildings. LM expects to achieve this goal.
Meter all individual buildings for electricity, natural gas, steam, and water, where cost-effective and appropriate.	LM met this goal. All required buildings are metered.	Continue to meet metering requirements. Ensure that buildings entering LM are metered appropriately. LM expects to achieve this goal.	Continue to meet metering requirements. Ensure that buildings entering LM are metered appropriately. LM expects to achieve this goal.	Continue to meet metering requirements. Ensure that buildings entering LM are metered appropriately. LM expects to achieve this goal.

Table 1. Goal Summary Table (continued)

Prior DOE Goal	Current Performance Status	2-Year Performance and Plans	5-Year Performance and Plans	10-Year Performance and Plans
Water Management				
20% potable water intensity (gallons per gross square foot) reduction by FY 2015 from a FY 2007 baseline and 0.5% YOY thereafter.	LM exceeded this goal. LM reduced its potable water intensity by 88.6% compared to the baseline year of FY 2007. LM reduced its potable water intensity by 6% in FY 2019 compared to FY 2018.	LM will ensure current practices to reduce potable water intensity are maintained and will work toward reducing potable water intensity. LM expects to achieve this goal.	Continue efforts to reduce potable water intensity. LM expects to achieve this goal.	Continue efforts to reduce potable water intensity. LM expects to achieve this goal.
Nonpotable fresh water consumption (gallons) reduction of ILA water. YOY reduction; no set target.	LM reduced ILA water use by 94.3% compared to the baseline year of FY 2010.	LM will ensure current practices to reduce ILA water use are maintained and will work toward reducing ILA water use.	Continue efforts to reduce water consumption and reduce ILA water use.	Continue efforts to reduce water consumption and reduce ILA water use.
Waste Management				
Reduce at least 50% of nonhazardous solid waste, excluding C&D debris, sent to treatment and disposal facilities.	LM met this goal. 50.7% of this waste category was diverted from treatment and landfills.	LM will continue to promote waste minimization and will reduce and recycle nonhazardous solid waste on LM projects and at LM sites. LM expects to achieve this goal.	LM will continue to promote waste minimization and will reduce and recycle nonhazardous solid waste on LM projects and at LM sites. LM expects to achieve this goal.	LM will continue to promote waste minimization and will reduce and recycle nonhazardous solid waste on LM projects and at LM sites. LM expects to achieve this goal.
Reduce C&D materials and debris sent to treatment and disposal facilities; YOY reduction; no set target.	LM met this goal. As compared to FY 2018, 31.8% (24,713 pounds) less of this type of waste was sent to treatment and disposal facilities in FY 2019.	LM will continue to promote waste minimization and will reduce, reuse, and recycle C&D materials and debris on LM projects and at LM sites. LM expects to achieve this goal.	LM will continue to promote waste minimization and will reduce, reuse, and recycle C&D materials and debris on LM projects and at LM sites. LM expects to achieve this goal.	LM will continue to promote waste minimization and will reduce, reuse, and recycle C&D materials and debris on LM projects and at LM sites. LM expects to achieve this goal.

Table 1. Goal Summary Table (continued)

Prior DOE Goal	Current Performance Status	2-Year Performance and Plans	5-Year Performance and Plans	10-Year Performance and Plans
Fleet Management				
20% reduction in annual petroleum consumption by FY 2015 relative to a FY 2005 baseline and 2.0% YOY thereafter.	LM did not meet this goal.	LM will encourage use of E85 vehicles, trip consolidation and video conferencing to help reduce conventional fuel use. However, lack of alternative fuel infrastructure negatively impacts this goal. LM does not expect to achieve this goal.	LM will encourage use of E85 vehicles, trip consolidation and video conferencing to help reduce conventional fuel use. However, lack of alternative fuel infrastructure negatively impacts this goal. LM does not expect to achieve this goal.	LM will encourage use of E85 vehicles, trip consolidation and video conferencing to help reduce conventional fuel use. However, lack of alternative fuel infrastructure negatively impacts this goal. LM does not expect to achieve this goal.
10% increase in annual alternative fuel consumption by FY 2015 relative to a FY 2005 baseline; maintain 10% increase thereafter.	LM did not meet this goal.	LM will continue to encourage use of E85 fuel through providing maps showing fuel stations. Lack of alternative fueling infrastructure will negatively impact the goal going forward. LM does not expect to achieve this goal.	LM will continue to encourage use of E85 fuel through providing maps showing fuel stations. Lack of alternative fueling infrastructure will negatively impact the goal going forward. LM does not expect to achieve this goal.	LM will continue to encourage use of E85 fuel through providing maps showing fuel stations. Lack of alternative fueling infrastructure will negatively impact the goal going forward. LM does not expect to achieve this goal.
75% of light-duty vehicle acquisitions must consist of AFVs.	LM met this goal.	Based upon current mission, LM will continue to evaluate AFVs for light-duty vehicles. Lack of alternative fueling infrastructure will negatively impact the goal going forward. If infrastructure is available and in close proximity, LM will assess purchasing AFVs. LM does not expect to achieve this goal.	Based upon current mission, LM will continue to evaluate AFVs for light-duty vehicles. Lack of alternative fueling infrastructure will negatively impact the goal going forward. If infrastructure is available and in close proximity, LM will assess purchasing AFVs. LM does not expect to achieve this goal.	Based upon current mission, LM will continue to evaluate AFVs for light-duty vehicles. Lack of alternative fueling infrastructure will negatively impact the goal going forward. If infrastructure is available and in close proximity, LM will assess purchasing AFVs. LM does not expect to achieve this goal.

Table 1. Goal Summary Table (continued)

Prior DOE Goal	Current Performance Status	2-Year Performance and Plans	5-Year Performance and Plans	10-Year Performance and Plans
Clean and Renewable Energy				
"Renewable Electric Energy" requires that renewable electric energy account for not less than 7.5% of a total agency electric consumption by FY 2013 and each year thereafter.	100% of LM's energy use was from renewable sources or covered by the purchase of RECs.	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.\n\nLM expects to meet this goal.	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.\n\nLM expects to meet this goal.	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.\n\nLM expects to meet this goal.
Continue to increase non-electric thermal usage. YOY increase; no set target but an indictor in the OMB scorecard.	Thermal sources are a negligible part of LM energy use. LM has no operational non-electric thermal installations.	LM has no operational non-electric thermal installations. The majority of LM's energy use is from electricity. LM will investigate non-electric thermal options when new energy projects are being developed.	LM has no operational non-electric thermal installations. The majority of LM's energy use is from electricity. LM will investigate non-electric thermal options when new energy projects are being developed.	LM has no operational non-electric thermal installations. The majority of LM's energy use is from electricity. LM will investigate non-electric thermal options when new energy projects are being developed.
Sustainable Buildings				
At least 15% (by building count) of owned existing buildings to be compliant with the revised Guiding Principles for HPSBs by FY 2020, with annual progress thereafter.	LM exceeded this goal.\n\n50% of its buildings comply with the 2016 GPs.	LM will continue assessing and prioritizing buildings greater than 10,000 GSF for their potential to achieve the GPs.\n\nLM expects to achieve this goal.	LM will continue assessing and prioritizing buildings greater than 10,000 GSF for their potential to achieve the GPs.\n\nLM expects to achieve this goal.	LM will continue assessing and prioritizing buildings greater than 10,000 GSF for their potential to achieve the GPs.\n\nLM expects to achieve this goal.
Net Zero Buildings: All new buildings (>5000 GSF) entering the planning process designed to achieve energy net-zero beginning in FY 2020.	N/A	N/A	N/A	N/A
Increase regional and local planning coordination and involvement.	N/A	N/A	N/A	N/A

Table 1. Goal Summary Table (continued)

Prior DOE Goal	Current Performance Status	2-Year Performance and Plans	5-Year Performance and Plans	10-Year Performance and Plans
Acquisition and Procurement				
Promote sustainable acquisition and procurement to the maximum extent practicable, ensuring BioPreferred and biobased provisions and clauses are included in all applicable contracts.	100% of new contract actions and existing contracts, included requirements for products and services to be BioPreferred and biobased.	LM will continue to promote sustainable acquisitions and procurement to the maximum extent practical and ensure that 95% of new contract actions, under both new and existing contracts, contain language that requires the supply or use of products and services that are sustainable. LM expects to achieve this goal.	LM will continue to promote sustainable acquisitions and procurement to the maximum extent practical and ensure that 95% of new contract actions, under both new and existing contracts, contain language that requires the supply or use of products and services that are sustainable. LM expects to achieve this goal.	LM will continue to promote sustainable acquisitions and procurement to the maximum extent practical and ensure that 95% of new contract actions, under both new and existing contracts, contain language that requires the supply or use of products and services that are sustainable. LM expects to achieve this goal.
Measures, Funding, and Training				
Annual targets for performance contracting to be implemented in FY 2019 and annually thereafter.	There was no target applicable for FY 2019. LM did not implement any performance contracts.	LM will continue to evaluate new projects for ESPC ENABLE initiatives during the planning process. LM does not expect to achieve this goal.	LM will continue to evaluate new projects for ESPC ENABLE initiatives during the planning process. LM does not expect to achieve this goal.	LM will continue to evaluate new projects for ESPC ENABLE initiatives during the planning process. LM does not expect to achieve this goal.
Electronic Stewardship				
Purchases – 95% of eligible acquisitions each year are EPEAT-registered products.	LM exceeded this goal. 99.73% of eligible acquisitions in FY 2019 were EPEAT-registered products.	LM will continue to acquire electronic products that meet or exceed purchasing specifications and standards required for federal agencies. LM expects to achieve this goal.	LM will continue to acquire electronic products that meet or exceed purchasing specifications and standards required for federal agencies. LM expects to achieve this goal.	LM will continue to acquire electronic products that meet or exceed purchasing specifications and standards required for federal agencies. LM expects to achieve this goal.
Power management: 100% of eligible PCs, laptops, and monitors have power management enabled.	LM met this goal.	LM will continue to maintain 100% compliance on all eligible systems. LM expects to achieve this goal.	LM will continue to maintain 100% compliance on all eligible systems. LM expects to achieve this goal.	LM will continue to maintain 100% compliance on all eligible systems. LM expects to achieve this goal.
Automatic duplexing: 100% of eligible computers and imaging equipment have automatic duplexing enabled.	LM met this goal.	LM will continue to maintain 100% compliance on all eligible systems. LM expects to achieve this goal.	LM will continue to maintain 100% compliance on all eligible systems. LM expects to achieve this goal.	LM will continue to maintain 100% compliance on all eligible systems. LM expects to achieve this goal.

Table 1. Goal Summary Table (continued)

Prior DOE Goal	Current Performance Status	2-Year Performance and Plans	5-Year Performance and Plans	10-Year Performance and Plans
Electronic Stewardship (continued)				
End of Life: 100% of used electronics are reused or recycled using environmentally sound disposition options each year.	LM met this goal. 100% of used electronics were disposed of using environmentally sound disposition options in FY 2019.	LM will continue to reuse or recycle used electronics in an environmentally sound manner that avoids disposal of electronics as waste. LM expects to achieve this goal.	LM will continue to reuse or recycle used electronics in an environmentally sound manner that avoids disposal of electronics as waste. LM expects to achieve this goal.	LM will continue to reuse or recycle used electronics in an environmentally sound manner that avoids disposal of electronics as waste. LM expects to achieve this goal.
Data Center Efficiency: Establish a power usage effectiveness target for new data centers and existing data centers; discuss efforts to meet targets.	N/A	LM will monitor and maintain the power usage effectiveness ratio within the target range. LM expects to achieve this goal.	LM will monitor and maintain the power usage effectiveness ratio within the target range. LM expects to achieve this goal.	LM will monitor and maintain the power usage effectiveness ratio within the target range. LM expects to achieve this goal.
Organizational Resilience				
Discuss overall integration of resilience in emergency response, workforce, and operations procedures and protocols.	LM conducted a variety of risk and vulnerability assessments to identify threats and hazards to different aspects of the LM program and completed all scheduled drills and tabletop exercises.	LM plans to perform an all-hazards survey at multiple LM sites, continue to identify areas of vulnerability and risk, and identify procedures to mitigate such risks under LM management.	LM will likely have completed some level of vulnerability screening for LM sites. Broad organizational vulnerability considerations will be better integrated into site management. Ongoing long-term cover performance and remedy resilience studies will continue.	LM will likely have completed vulnerability assessments for certain sites. Measures will be taken to reduce vulnerabilities and increase resilience at those and other LM sites as feasible. Ongoing long-term cover performance and remedy resilience studies will continue.

Table 1. Goal Summary Table (continued)

Prior DOE Goal	Current Performance Status	2-Year Performance and Plans	5-Year Performance and Plans	10-Year Performance and Plans
Multiple Categories				
YOY Scope 1 and 2 GHG emissions reduction from a FY 2008 baseline.	Because some data is unavailable, performance of this goal cannot be determined at this time. Based on currently available data, LM might not achieve this goal.	LM will continue to promote GHG emission reductions and will track data at LM sites. LM expects to achieve this goal.	LM will continue to promote GHG emission reductions and will track data at LM sites. LM expects to achieve this goal.	LM will continue to promote GHG emission reductions and will track data at LM sites. LM expects to achieve this goal.
YOY Scope 3 GHG emissions reduction from a FY 2008 baseline.	Because some data is unavailable, performance of this goal cannot be determined at this time. Based on currently available data, LM might not achieve this goal.	LM will continue to promote GHG emission reductions and will track data at LM sites. LM does not expect to achieve this goal.	LM will continue to promote GHG emission reductions and will track data at LM sites. LM does not expect to achieve this goal.	LM will continue to promote GHG emission reductions and will track data at LM sites. LM does not expect to achieve this goal.

Abbreviations:
AFV = alternative fuel vehicle
Btu = British thermal units
C&D = construction and demolition
E85 = ethanol fuel blend
EI = energy intensity
EISA = Energy Independence and Security Act
ESPC = Energy Savings Performance Contract
GHG = greenhouse gas
GP = Guiding Principle
GSF = gross square feet
HPSB = high-performance and sustainable building
ILA = industrial, landscaping, and agricultural
OMB = U.S. Office of Management and Budget
RE = renewable energy
REC = renewable energy credit
YOY = year over year

2.0   Mission Change

By FY 2028, LM is projected to assume responsibility for 28 additional legacy sites. Potential future activities include management of the Manhattan Project National Historical Park sites and mercury storage for the federal government. As LM receives more sites and additional scope, it will employ more workers, occupy more workspace, operate more vehicles, conduct more travel, consume more fuel, purchase more personal property, and generate more waste. Conditions of sites at transfer could vary greatly, making it difficult to predict their impact on meeting the

sustainability goals and targets stated in this SSP. LM will monitor the impacts to meeting sustainability goals and targets as new sites are added and scope increases and will adjust its EMS accordingly.

3.0   Energy Management

This section covers LM's approach and vision for addressing energy-related topics such as energy intensity, Energy Independence and Security Act (EISA) Section 432 evaluations, and metering status. The following Dashboard pages fall under the energy management category:

- Energy
- Facility Goal Category
- Facility Metering Status
- Efficiency and Conservation Measures

- EISA Section 432 - Benchmarking
- EISA Section 432 - Evaluations
- Non-Fleet Vehicles and Equipment Fuel

3.1   Energy Intensity

3.1.1   Energy Intensity Performance Status

LM's FY 2019 energy intensity (EI) is a 35% decrease from the FY 2003 baseline but is a 59% increase from FY 2018.

EI was affected by the reduction in square footage for goal subject buildings. Building 7 at the LM office at Grand Junction, Colorado, is an 18,900 square-foot building that was included in the FY 2018 EI calculation. Building 7 was vacant and down-scaled operationally to prepare for major renovation or demolition, so it was removed from the goal subject square footage for FY 2019.

LM successfully replaced the heating, ventilating, and air conditioning unit on the Monticello, Utah, Disposal and Processing Sites office trailer with a more efficient unit.

3.1.2   Energy Intensity Planned Actions and Projected Performance

LM will continue to explore ways to reduce energy usage in existing buildings and will purchase bundled green electricity when available and practical. LM will perform the following planned activities:

- Investigate ways to reduce energy usage in goal-excluded (not covered) buildings.

- Continue constructing a new energy efficient building at the Weldon Spring, Missouri, Site. Because of construction delays, occupancy of the new interpretive center will likely take place in FY 2021.

- Investigate upgrading or replacing Building 7 at the LM office at Grand Junction to be more energy efficient.

- Evaluate DOE's 50001 Ready program and 50001 Ready Navigator for applicability to LM's sustainability program.

The expected impact of these planned activities is a continued reduction in energy usage and associated Scope 1, 2, and 3 greenhouse gas (GHG) emissions. No additional funding is required to conduct these sustainability actions beyond what is currently budgeted.

Measurable goals and milestones associated with energy management for FY 2020 include the following:

- Assess newly acquired buildings, including those at recently transitioned sites, to determine whether energy evaluation and retrocommissioning requirements are applicable.

- Develop a pilot internal energy dashboard that would communicate sustainability targets and goals and monitor progress toward meeting those goals. Once approved by the Information Technology (IT) group, the Energy and Sustainable Buildings teams will work with IT and other applicable groups to implement the new dashboard.

- Continue to provide a building energy use comparison report detailing energy use in individual buildings to LMS site leads and LM site managers to allow them to compare building energy use at their individual sites to building energy use across LM.

- Purchase sufficient renewable energy credits (RECs), in addition to RECs generated by onsite renewable energy installations, to offset GHGs generated by LM's electricity usage.

- Utilize tools such as *Project or Activity Evaluation (PAE)* forms (LMS 1005) and statements of work (SOWs) early in the project planning process to identify opportunities to reduce energy consumption.

Recommended Charts, Graphs, or Tables

a. *Show energy usage progress and forecast progress from FY 2003 through FY 2029 for goal subject and excluded, separately. Be certain to examine site plans, program plans, and other relevant information in creating your forecast. In addition, be sure to include changes in facility gross square footage in a separate table.*

   When forecasting, consider:

   - *Savings from funded efficiency and conservation measures (ECMs) that are not yet operational;*

   - *Savings from ECMs likely to be funded based on internal project prioritization and/or urgency for upgrade mission;*

   - *Ramp up on energy use/demand in existing, and possibly new facilities, due to mission such as High-Energy Mission-Specific Facilities (HEMSFs), High Performance Computing (HPC) data centers, and super computer usage; and*

   - *Reduction of energy use from facilities set for shutdown or disposal.*

Figure 1 shows LM's historical and projected electrical use from FY 2003 to FY 2029. LM was established in late 2003 and energy data was not formally collected until 2007. In FY 2015, the Fernald Preserve extraction wells were individually metered and thus have since been excluded from the goal subject energy calculation. Projections for the Fernald Preserve wells call for a reduction in pumping of 38% after FY 2022, which accounts for the drop in excluded electric after that time. LM expects goal subject electricity usage to remain fairly steady through 2029.

Figure 2 below shows LM's historical and projected EI progress from FY 2003 through FY 2029. Energy data prior to 2007 are estimates based on data gathered from SPO. The EI for FY 2019 shows a marked increase from FY 2018. This is because the LM-owned Building 7 (at the LM office at Grand Junction) was included in the FY 2018 goal subject square footage, but the building was vacant and down-scaled operationally to prepare for major renovation or demolition, so it has been removed from the goal subject square footage for FY 2019.

LM Historic and Future Energy Use

MMBtu
logarithmic scale

	FY 2003	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Facility Goal Category	1,077,352	33,101	26,871	27,053	23,882	19,069	20,479	15,090	11,469	5,595	5,780	5,363	6,061	6,422	6,358	6,295	6,232	6,169	6,108	6,047	5,986	5,926	5,867	5,808
Total Excluded	0	0	0	0	0	0	0	3,841	10,858	9,406	14,743	15,469	15,255	14,214	14,072	13,931	11,077	10,939	10,802	10,667	10,533	10,401	10,269	10,140

Abbreviation: MMBtu = million British thermal units

Figure 1. LM Historical and Projected Covered and Excluded Electricity Use, FY 2003 to FY 2029

Energy Intensity
Actual and Projected Performance

EI
Btu/sq ft

	FY 2003	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Actual Energy Intensity	257678	785807	636748	236202	208033	138948	288350	403471	306654	143910	150486	139642	105239	169354	0	0	0	0	0	0	0	0	0	0
Anticipated Energy Intensity															167660	165984	164324	162680	161054	159443	157849	156270	154708	153160

Figure 2. Energy Intensity Actual and Projected Performance, FY 2003 to FY 2029

Figure 3 shows LM's gross square feet (GSF) from FY 2007 through FY 2019.

LM Building Gross Square Feet

Gross Sq Ft	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	69,792	69,792	228,073	114,797	137,239	71,015	38,668	158,004	200,388	199,918	163,199	163,199	143,979
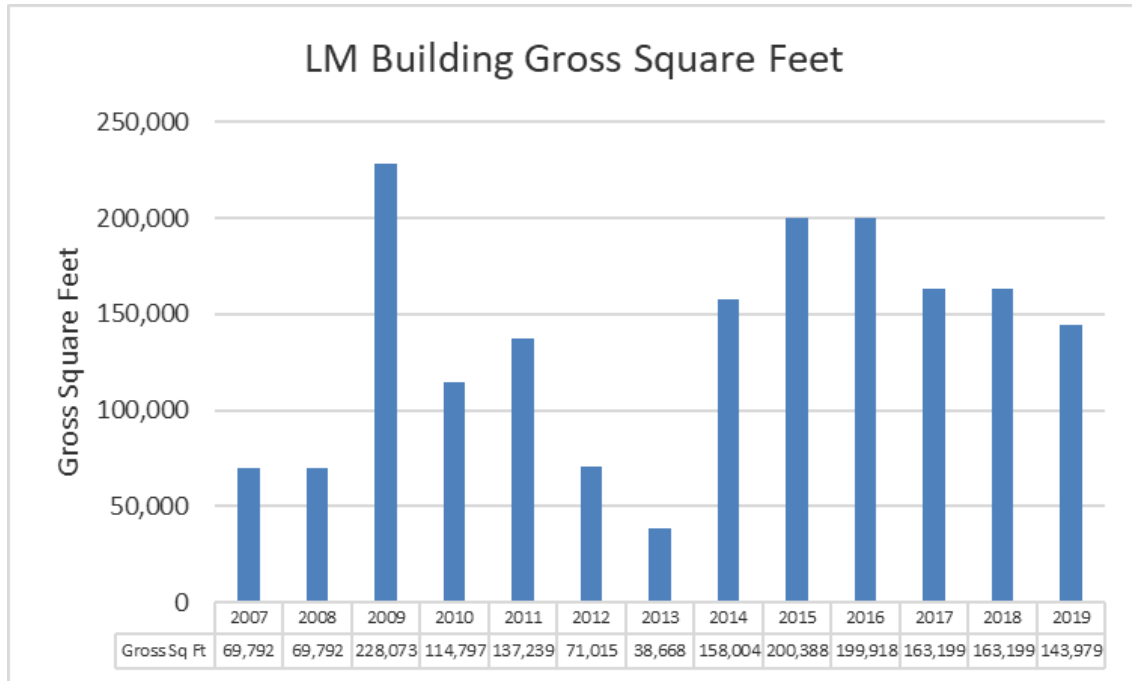
Figure 3. LM Building Gross Square Footage

b. *If applicable, include a chart demonstrating actual vs. projected energy use by type (electricity, natural gas, etc.), in million Btu (MMBtu), for any HEMSFs. Show both existing and planned HEMSFs individually as well as the site base energy use. In addition, sites may select to include a chart to show actual and projected electricity, for any HEMSF.*

LM has no HEMSFs.

c. *If applicable, include charts and tables with actual and projected energy (by type) and water data on any existing or planned HPC facilities at your site and efficiency measures performed to reduce energy intensity.*

LM has no existing or planned HPC facilities.

The following provides responses to the additional SSP guidance discussion points (identified in italics) on energy usage and intensity strategies.

a. *Describe any initiatives, projects, or actions used to increase energy savings in FY 2019 and beyond.*

LM undertook one new initiative in FY 2019 to increase energy savings:

*   Began construction on a new, more energy efficient Interpretive Center at the Weldon Spring site.

Three future initiatives to increase energy savings at the Weldon Spring site are:

- Complete construction on a new, more energy efficient Weldon Spring Site Interpretive Center. The present Interpretive Center is heated with electricity and the new building will be heated with natural gas, which will make it more efficient and reduce electrical loads.

- Change the power requirements for the entire site with a project formulated and funded by LM. The work associated with this project is being executed by the U.S. Army Corps of Engineers (USACE) through an Interagency Agreement. The project will reduce the power supplied to the site from an approximately 1278 kilovolt-amp (kVA) supply to an approximate demand load of 200 kVA.

- Convert the 3-phase power supplied to the Leachate Collection and Removal System with 1-phase power and install LED lighting and more efficient electric heating (natural gas is not available to this structure).

b. *Discuss any extenuating factors that may be skewing the site's performance regarding the energy intensity reductions/increases reported in FY 2019, or could have a foreseeable impact in the upcoming 10 years.*

Many of the DOE-owned buildings included in the EI calculation are older, less energy efficient buildings. As stated in item "a" above, the new Weldon Spring Site Interpretive Center should improve EI performance starting in FY 2020 as it is replacing older buildings and a mobile office trailer.

c. *Discuss the use of Energy Management tools:*

LM will continue to utilize the following energy management tools:

- **Remote building energy performance assessment auditing technology:** LM has the capability to remotely access building energy use at the Weldon Spring site and the Tuba City, Arizona, Disposal Site through the System Operation and Analysis at Remote Sites (SOARS) system. The SOARS system collects data every 5 minutes. The data is available on the SOARS website to be downloaded and analyzed. Remote access to building energy use will be explored for the other sites connected to SOARS. At the Monticello 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. In addition, LM enters all required building energy use into the EPA Energy Star Portfolio Manager and provides site managers with energy usage data.

- **Demand management program:** The Fernald Preserve; the Grand Junction, Colorado, Disposal/Processing Site; the Tuba City site; and the Weldon Spring site have demand charges on their electric bills. Only the Fernald Preserve has large motor loads; this is due to its 20 extraction wells, most of which run continually. These other sites do not have a considerable amount of changing motor loads that could be helped with demand monitoring, but the loads will be periodically reevaluated.

- **EPA Green Button data:** An initial investigation of LM's utility providers indicated none of the utilities have implemented or are planning to implement the Green Button initiative in the near future. If a utility were to implement a Green Button program, the

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 might implement Green Button or other demand management programs.

- **Space utilization and optimization practices and policies:** U.S. General Services Administration (GSA) square footage guidance was used for designing office and cubicle space. However, available workspace at several office locations is over, at, or near capacity for employees. LM is maximizing the current space it has to meet the particular mission and activity requirements.

- Current solutions to accommodate additional employees include splitting larger offices, adding trailers, extending leases, incorporating various spaces throughout an office building where visitors can sit and work with connectivity, and implementing new telework policies.

d. *If excluding buildings from the goal, see Appendix C and complete the Excluded Buildings Self-Certification.*

LM uploaded the Excluded Buildings Certification letter in the Dashboard. A copy is provided in Attachment 2.

e. *Describe plans to reduce deferred maintenance while at the same time increasing energy efficiency and improving asset condition.*

LM will continue to identify deferred maintenance for energy-consuming buildings and facilities (occupied as well as unoccupied) as instances are identified, and at a minimum every 5 years through the Condition Assessment Surveys (CASs), which are required annually by DOE Order 430.1C Chg 1, *Real Property Asset Management*. Deferred maintenance identified in these assessments will be addressed, where applicable, pending funding availability.

Energy efficiencies have been realized by the following:

- Using exterior LED lighting (some of which is solar powered)

- Planting native plant species (minimizes the need for irrigation)

- Right sizing the GSA fleet

- Mandating use of Energy Star certified products at the new LM office at Westminster, Colorado

- Placing buildings into standby status as plans are developed for long-term use of Building 7 at the LM office at Grand Junction

- Reducing the overall employee-to-building square footage ratio to align with GSA guidance

f. *Discuss significant planned/potential excess facility disposition over the next five to ten years and quantify the potential impact to energy intensity reduction.*

No facilities are planned for disposition at this time.

g. Describe the Life-Cycle Cost Analysis used to prioritize efficiency measures.

LM will be using the Building Life Cycle Cost programs developed by the National Institute of Standards and Technology to help provide computational support for the analysis of efficiency measures.

h. Address site implementation of setbacks (i.e., setbacks that are the subject of several Inspector General reports).

LM utilizes setbacks to control heating, ventilation, and air conditioning (HVAC) systems in LM facilities.

i. Note if your site explored DOE's Better Buildings Initiative's Smart Labs, International Organization for Standardization (ISO) 50001, or DOE's 50001 Ready Program. If so, discuss opportunities identified and implemented, the impacts on site or building performance, and any additional benefits realized. Alternatively, if after exploring these options, the site decided not to move forward, explain why. SPO will be setting up a Departmental level 50001 Ready account pre-populated with existing agency efforts. If interest in implementing, reach out to SPO and AU-21.

LM has completed a cursory review of the ISO 50001 Ready Program. LM will do a more in-depth review of this program in FY 2020 and decide which aspects of the program are applicable to LM.

3.2 EISA Section 432 Continuous Evaluations

3.2.1 EISA Evaluations Performance Status

LM completed 100% of all required FY 2019 EISA evaluations in FY 2019. Table 2 shows the evaluations completed in the EISA evaluation cycles from FY 2015 through FY 2019. There were no major changes.

As a best management practice, LM maintains a schedule to track when EISA evaluations are due to be completed.

Table 2. Completed EISA Section 432 Evaluations 2015 to 2019

Building	Energy	Water
Tuba City Site		
Control	5/18/2018	5/10/2019
Shop/Lab	5/18/2018	5/10/2019
Grand Junction Disposal Site		
Decontamination	4/5/2019	5/15/2018
Office Trailer	4/5/2019	5/15/2018
Storage	4/5/2019	N/A
Fernald Preserve		
Visitor Center	5/20/2016	5/2/2016
Old Comm	5/20/2016	N/A
Old DO	5/20/2016	N/A
Pole Barn	5/20/2016	N/A
Weldon Spring Site		
IC	5/20/2016	12/23/2015
Prog Storage/Lab	5/20/2016	12/23/2015
Office Trailer	5/20/2016	12/23/2015
Monticello Site		
Office trailer	5/24/2017	6/1/2016
Pinellas County Site		
Shed 1	5/15/2019	N/A
Shed 2	5/15/2019	N/A

3.2.2   EISA Evaluations Planned Actions and Projected Performance

LM will continue to conduct EISA energy and water evaluations at its sites on a rotating basis, as shown in Table 3. The expected impact of these planned activities will be to ensure 100% of LM sites are evaluated every 4 years to meet the requirements of EISA Section 432. No additional funding is required to conduct the evaluations beyond what is currently budgeted.

Table 3. Planned EISA Section 432 Evaluations

Planned EISA Section 432 Evaluations		
Year[a]	**Energy Evaluations**	**Water Evaluations**
2020	Fernald Preserve, OH, Site Weldon Spring, MO, Site	Fernald Preserve, OH, Site (P/ILA) Monticello, UT, Disposal and Processing Sites (P)
2021	Monticello, UT, Disposal and Processing Sites Monument Valley, AZ, Processing Site Shiprock, NM, Disposal Site	Grand Junction, CO, Disposal/Processing Site (P)
2022	LMBC at Morgantown, WV Tuba City, AZ, Disposal Site LM Office at Westminster, CO	Tuba City, AZ, Disposal Site (P)
2023	Mound, OH, Site Pinellas County, FL, Site	Weldon Spring, MO, Site (P)

Note:
[a] EISA cycle year runs from June to May. Current 4-year cycle is 2015 to 2019.

Abbreviations: ILA = industrial, landscaping, and agricultural (nonpotable) water site; P = potable water site

Measurable goals and milestones associated with EISA evaluations for FY 2020 include the following:

- Combine evaluations with CASs when possible

- Benchmark covered facilities with Energy Star Portfolio Manager and ensure data is accessible to SPO

- Continue to conduct building evaluations remotely using SOARS or by using personnel on the site, when possible, to reduce GHG emissions related to offsite personnel traveling to and from sites

LM's responses to the additional SSP guidance questions (identified in italics) on EISA Section 432 benchmarking and evaluations are below.

a. *Explain your site's approach to the 4-year energy and water evaluation cycle – including mechanisms, procedures (e.g. combining EISA S432 evaluations with condition assessment surveys), and re-/retro-commissioning or continuous commissioning.*

LM evaluates sites on a rotating basis to ensure 100% of the sites are evaluated every 4 years to meet the requirements of EISA Section 432 and combines the evaluations with CASs when possible. None of LM's buildings fit the requirements for retrocommissioning.

b. *Discuss any potential issues with meeting deadlines or efforts to combine EISA S432 evaluations with condition asset surveys. If a site has an expired comprehensive evaluation, a strategy to complete the remaining evaluations, including an anticipated timeframe for completion is required.*

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; however, there are different timing requirements for each, limiting our ability to perform them at the same time.

c. *DOE encourages measurement and verification (M&V) of implemented measures and projects. However, it is understood that it may not be cost-effective to perform continuous M&V on all measures. Describe your site's approach to M&V for projects funded through funding mechanisms other than Energy Savings Performance Contracts (ESPCs). Only projects that are financed under an ESPC have a statutory requirement to conduct M&V. For third party financed projects with M&V in place, please describe how your site witnesses the process and confirms accuracy.*

LM does not have any projects funded through ESPCs, thus, is not statutorily required to perform M&V. However, LM performs M&V on conservation measures during EISA Section 432 evaluations.

d. Discuss benchmarking efforts and plans to benchmark additional assets. To consider an asset as benchmarked, 12 months of consecutive data must be are reported. Only sites with completed benchmarking data by the end of the calendar year can receive weather normalization credit. If using other tools aside from EPA's Portfolio Manager to benchmark asset, please note the tool being used and the reason for use.

To benchmark its assets, LM uses EPA's Portfolio Manager to track all LM-owned and LM-leased buildings that are not excluded.

3.3 Metering Status: Meter All Individual Buildings for Electricity, Natural Gas, Steam, and Water, Where Cost-Effective and Appropriate

3.3.1 Metering Performance Status

LM has installed all required meters. There were no major initiatives or changes in FY 2019.

As a best management practice, LM updated the LM metering plan.

3.3.2 Metering Planned Actions and Projected Performance

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

- Reevaluate on a periodic basis local utility companies' implementation of EPA's Green Button initiative

- Provide annual utility usage to site and facility leads so they can see utility performance and make changes, if cost-effective, to improve efficiency

The expected impact of these planned actions is to identify methods for potential implementation to reduce energy at LM facilities. No additional funding is required to implement these actions beyond what is currently budgeted.

Measurable goals and milestones for FY 2020 include the following:

- Evaluate metering needs for new sites and buildings in the LM portfolio

- Explore additional metering in the data center at the LMBC at Morgantown and at the LM office at Grand Junction

- Review forthcoming revised DOE metering guidance and perform a gap analysis against the current LM metering plan

LM's responses to the additional SSP guidance questions (identified in italics) on metering are below.

a. *Describe your site's strategy and plans to improve utility metering infrastructure and use of associated data. Topics should include funding, personnel, energy tracking systems, and implementation barriers.*

All LM buildings required to be metered at this time are metered. As opportunities arise, updated metering is installed. Metering information is used for benchmarking, reporting, system diagnostics and maintenance, and M&V of savings.

b. *Highlight any successes or opportunities identified due to the installation of metering infrastructure and buildings management systems at your site.*

Metering at the Weldon Spring site identified extensive energy loss because of the outdated power distribution system at the site. A project is being pursued to match load/demand with the supply since presently approximately 1300 kVA is supplied to the site and it requires only about 200 kVA. Also, the old overhead lines will be placed underground to reduce maintenance and safety issues.

c. *Describe use of metering data (e.g., benchmarking, verifying utility bills, measurement and verification of savings, education and behavior change, energy system diagnostics and maintenance, time-of-use and demand response, cost allocation) and how it is incorporated into site plans.*

LM uses metering information for benchmarking, reporting, system diagnostics and maintenance, and M&V of savings. However, none of the projects LM has implemented to reduce energy or water savings were financed under an ESPC, so there is not a statutory requirement to conduct M&V for them.

d. *Identify issues associated with maintenance and/or use of existing meters (consistent with the reported Dashboard status) and plans for resolution.*

No issues have been identified.

e. *Due to continued Dashboard reporting issues with this module, please provide site-specific documents used for tracking metering information.*

LM uses Excel spreadsheets to track LM's energy and water use. Data comes from utility bills, from LM-owned meters, and from lessors.

3.4 Non-Fleet Vehicles and Equipment

3.4.1 Non-Fleet Vehicles and Equipment Performance

LM non-fleet and equipment fuel usage is highly variable from year to year. Usage decreased 48% from 2018 but increased 6% from 2017.

As a best management practice, the Fernald Preserve replaced aged equipment with newer equipment that is more fuel-efficient. This included a tractor, a track loader, and two utility vehicles. Also obtained was an electric vehicle for the Visitors Center outreach staff.

3.4.2   Non-Fleet Vehicles and Equipment Planned Actions and Projected Performance

LM will continue evaluating reductions in non-fleet vehicles and equipment fuel usage at its sites. The expected impact of these planned activities will be to reduce fuel usage and associated Scope 1 GHG emissions. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with non-fleet vehicles and equipment for FY 2020 include the following:

- Monitor the non-fleet vehicle and equipment fuel usage

- Encourage use of energy-efficient generators and equipment

- Utilize tools such as PAE forms and SOWs early in the project planning process to identify opportunities to reduce non-fleet vehicle and equipment fuel consumption

LM's responses to the additional SSP guidance questions (identified in italics) on non-fleet vehicles and equipment are below.

a. *Describe major initiatives or changes to missions or facilities in FY 2019 that contributed in significant ways to each category area*

   LM undertook an initiative in FY 2019 to replace aging equipment at the Fernald Preserve. A tractor, a track loader, two utility vehicles, and one electric utility vehicle were all purchased new, to replace old equipment.

b. *Share success stories and accomplishments from FY 2019, as well as lessons learned and best management practices.*

   As a best management practice, the Fernald Preserve replaced aging equipment with newer equipment that is more fuel efficient. This included a tractor, a track loader, and two utility vehicles. Also obtained was an electric vehicle for the Visitors Center outreach staff.

   Total GHG from fuel usage by non-fleet vehicles and equipment (V&E) declined in FY 2019 compared to FY 2018.

c. *Quantify performance towards goals, savings (energy, dollar, etc.) when possible, and include the percent change from the prior year and from the baseline stated in the relevant goal.*

   In FY 2019 LM decreased non-fleet V&E fuel usage 48.5% from FY 2018. LM has no historic data on non-fleet fuel usage prior to FY 2011.

d. Discuss and show progress made in reducing non-fleet V&E fuel use not captured by the Federal Automotive Statistical Tool (FAST) reporting system.

LM's energy use by non-fleet V&E varies widely from year to year. LM currently manages, maintains, or has an interest in 100 sites, many of them in remote locations. Generators and equipment are periodically needed at the remote sites, depending on scheduled projects.

e. Discuss trends pertaining to this category of fuel use and methods employed to reduce fuel use for non-fleet V&E.

Efforts are made to use energy-efficient generators and equipment, but it is difficult to uncover a use trend from year to year due to the remote nature of some locations and the sporadic projects scheduled for these sites, thus making it difficult to accurately measure any reduction goal.

4.0   Water Management

This section covers LM's approach and vision to reduce potable and nonpotable water consumption, to comply with storm water management requirements, and to improve water efficiency. In addition, this section summarizes any issues or obstacles related to the implementation of reduction strategies or the collection of water consumption data. The following Dashboard pages fall under the Water Management category:

- Water
- Facility Goal Category
- EISA Section 432 Evaluations
- Efficiency and Conservation Measures

4.1 Water Management Performance Status

Table 4 summarizes potable; nonpotable; and industrial, landscaping, and agricultural (ILA) water usage at all of the LM sites combined since 2007 based on water and energy-use GSF values. As shown in Table 4, LM reduced its potable water intensity (WI) by 92.1% in FY 2019 compared to the baseline year of FY 2007. LM reduced its potable WI by 34.6% in FY 2019 compared to FY 2018. In addition, LM also reduced its ILA water use by 98.9% compared to the baseline year of FY 2010.

As a best management practice, LM evaluate ways it can reduce, reuse, and recycle potable and ILA water with project-planning tools such as PAE forms and SOWs. The Water Conservation team reviewed SOWs and PAE forms for opportunities to conserve water during projects.

Table 4. LM Combined-Sites Water Use Since 2007

Fiscal Year	Gross Square Footage (GSF)[a]	Water Use (gallons)		Potable-Water WI (gallons/GSF)	Potable-Water WI Percent Change	ILA (nonpotable) Use Percent Change (gallons)
		Potable Water	Nonpotable Fresh Water ILA			
2007	10,992	1,497,098	N/A	136.20	N/A—Baseline year	N/A
2008	11,712	1,070,768	N/A	91.42	32.9% reduction	N/A
2009	22,512	549,462	N/A[c]	24.41	82.1% reduction	N/A
2010	22,464	80,358	503,336[d]	3.58	97.3% reduction	N/A—Baseline year
2011	69,157	1,112,688	456,093	16.09	88.2% reduction	9.4% reduction
2012	69,157	392,791	459,729	5.68	95.8% reduction	8.7% reduction
2013	38,422[b]	904,953	397,082	23.55	82.7% reduction	21.1% reduction
2014	38,422	381,952	458,530	9.94	92.7% reduction	8.9% reduction
2015	38,422	416,838	20,869	10.85	92.0% reduction	95.9% reduction
2016	40,616[e]	313,227	5,500	7.71	94.3% reduction	98.9% reduction
2017	40,616	373,293	2,000	9.19	93.3% reduction	99.6% reduction
2018	40,616	670,317	0	16.5	87.8% reduction	100.0% reduction
2019	57,308[f]	617,715	5,500	10.78	92.1% reduction	98.9% reduction

2019 combined-sites potable-water WI = (617,715 ÷ 57,308) = 10.78

2019 combined-sites percent potable-water WI Reduction:
    = [(2007 WI − 2019 WI) ÷ 2007 WI] × 100%
    = [(136.20 − 10.78) ÷ 136.20] × 100%
    = 92.1% reduction

2019 combined-sites percent ILA reduction:
    = [(2010 ILA − 2019 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 FY 2013; (that building's square footage was in the 2012 GSF).

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

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

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

[f] LM decommissioned the trailer at the Old Rifle site in fourth-quarter FY 2018, which decreased the square footage. However, the square footage for Building 7 at the LM office at Grand Junction was added to the GSF for water use in FY 2019.

Abbreviation: ILA = industrial, landscaping, and agricultural

4.2   Water Management Planned Actions and Projected Performance

LM will continue to track and monitor potable and ILA water use for FY 2020 and beyond to identify opportunities to reduce potable and ILA water consumption and ways to reuse and recycle water. LM expects minimal impact from planned FY 2020 activities; no additional funding is required beyond what is currently budgeted.

LM did not have any issues or obstacles related to the implementation of reduction strategies or the collection of water consumption data.

Measurable goals and milestones associated with water management for FY 2020 include the following:

- Maintain, update as needed, and follow the water management plan described in the LM/LMS *Environmental Management System Teams Manual* (LM-Manual-3-20.3-1.0, LMS/POL/S11374), Section 2.3, "Water Conservation Team" (see Attachment 3)

- Participate early in the project planning process using tools such as PAE forms and SOWs to identify opportunities to reduce potable water consumption and ILA water usage and identify or establish storm water management requirements, as applicable

- Identify and implement the use of low-water-use landscaping technologies and practices

LM's responses to the additional SSP guidance questions (identified in italics) on water management are below.

Please Include the Following: Charts, Graphs, or Tables

a. *Show water usage for potable water and nonpotable water consumption, separately, and forecast progress from FY 2007 through FY 2029. Be certain to examine site plans, program plans, and other relevant information in creating your forecast. Please include values for any graphs or charts for each year. In addition, be sure to include changes in facility gross square footage in a separate table.*

Figure 4 shows LM's WI progress for FY 2007 through FY 2019 and Figure 5 shows LM's forecasted water usage through FY 2029 for potable and nonpotable water.

LM Potable Water Intensity (WI)

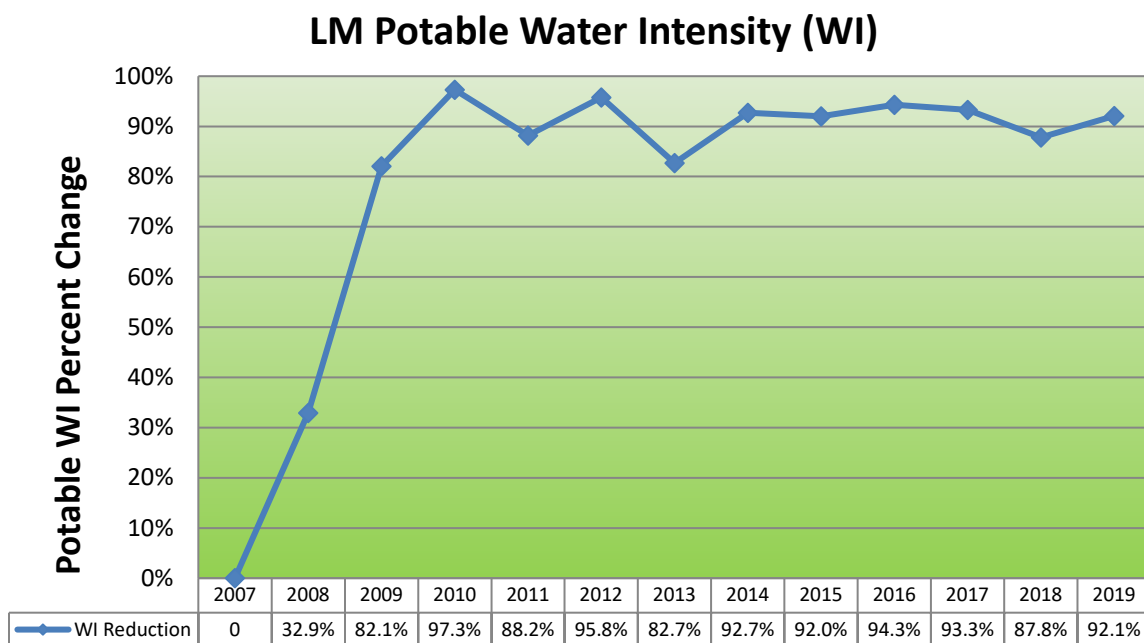|	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WI Reduction	0	32.9%	82.1%	97.3%	88.2%	95.8%	82.7%	92.7%	92.0%	94.3%	93.3%	87.8%	92.1%

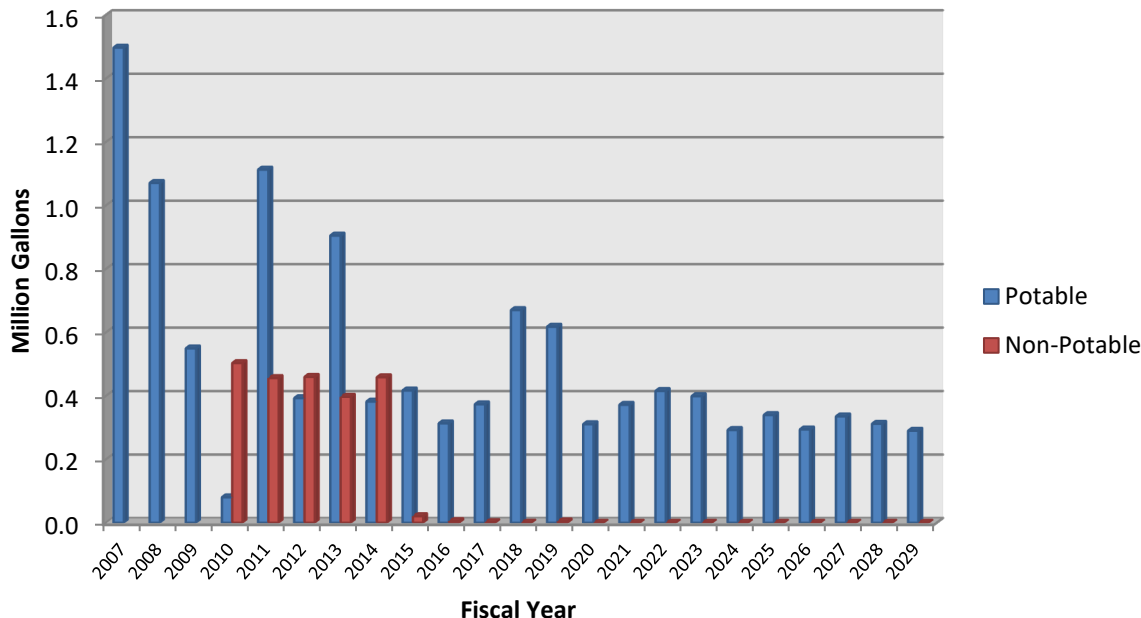*Figure 4. Potable Water Intensity*

LM Past and Forecasted Water Use

Figure 5. LM Past and Forecasted Water Use

b. *If applicable, include a chart (or table) that shows those facilities (buildings/Other Structures and Facilities [OSFs]) that have the highest potable water intensity use (gallons per gross square foot), i.e., HEMSFs and HPCs.*

LM has no HEMSFs or HPCs.

c. *If applicable, include a chart (or table) that shows those facilities (buildings/OSFs) that account for 75% of the site's Potable Water Usage, i.e., HEMSFs and HPCs.*

Not applicable to LM.

Water Usage and Management

a. *Describe any initiatives, projects, or actions used to increase water efficiency in FY 2019. Quantify reductions when possible.*

There were no projects during FY 2019 that had opportunity for increased water efficiency. The largest water-using project during FY 2019 was the mission-related receipt and placement of radioactive material at the Grand Junction disposal site. This water was used for dust suppression and decontamination purposes at the site.

b. *Consider excluding facility square footage from the water intensity (WI), if the asset uses energy but not water or is undergoing disposal. There are no exclusions for high water usage facilities, however, should you have the information please provide the split in your narrative*

(usage and associated square feet) to help SPO make the case to allow for high water usage exclusions.

LM has excluded facility square footage from the WI if the asset uses energy but no water for several years. SPO has been involved in discussions on the impacts of including extra square footage on LM's WI; inclusion has yielded high, and incorrect, WI in past years.

The square footage for Building 7 at the LM office at Grand Junction was included in the water use GSF for FY 2019. Table 5 shows the comparison of WI calculated with square footage for facilities using water versus for facilities using energy (i.e., the square footage used by the Dashboard).

Table 5. Water Intensity Comparison Using LM Water Use and Dashboard Gross Square Footage

Fiscal Year	GSF (LM water use only)	GSF (Dashboard)	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
2019	57,308	38,408	617,751	10.8	16.1	92.1% reduction	25.1% reduction

c. *Discuss major water consuming end-uses, such as cooling, heating, plumbing, irrigation, and laboratory equipment. If a water balance has been performed within the last five years, provide results. If no water balance has been performed within that timeframe, explain why and indicate whether a future water balance is planned.*

Major water-consuming end-uses include use of sinks, toilets, drinking fountains, decontamination and dust suppression equipment, emergency eyewash stations and showers, and a pond used to support the Fernald Preserve ground source heat exchange system. LM has not calculated water balances because the effort would not be cost-effective; LM has minimal water use and the cost of the effort would outweigh any potential savings from the effort.

d. *Summarize the site's efforts in identifying and implementing alternative water sources. Alternative water sources offset the use of fresh surface and groundwater sources and are used in non-potable applications such as cooling tower makeup and irrigation. Types of alternative water include onsite gray water, harvested rainwater, process discharge water, and reclaimed wastewater.*

LM makes 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 and sends it to an 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 (PAE forms, SOWs) to help identify ways to reduce water use during planned projects at all sites. LM will continue to evaluate future projects for the potential use of alternative water sources.

e. *Note whether a site is replenishing water supplies (i.e. aquifer recharge) and provide documentation on the quality and quantity.*

> *Depending on the quality of water being replenished, it may be possible to receive credit towards water use. Upon review of documentation, SPO will determine whether or not a credit can be received and progress will be adjusted accordingly. Water that is returned to a water source at the same quality as the water source is considered non-consumptive.*
>
> *Note*

LM does not replenish water supplies.

f. *Discuss water supply arrangement and costs, specifically note if water is provided for free.*

Water supply arrangement and costs vary depending on the site. The Fernald Preserve, Monticello, and Weldon Spring sites receive water through local municipalities. The Grand Junction disposal site receives water via trucks hauling water from offsite. All water is purchased except for the Tuba City site's water, where well water is used for the site's water needs.

g. *Summarize the site's water metering strategy.*

LM measures its potable and ILA water use with standard water meters at all sites under the Water Conservation team.

h. *Note whether the site has a water management plan. If the site has a current water management plan, include as an attachment to the Dashboard Water Policy Tracker Module. If the site does not have a water management plan, explain why and indicate whether a water management plan will be developed in the future.*

LM maintains and follows a water conservation plan found in the LM/LMS *Environmental Management System Teams Manual* (LM-Manual-3-20.3-1.0, LMS/POL/S11374), Section 2.3, "Water Conservation Team" (see Attachment 3).

i. *If applicable, summarize non-potable fresh water used for industrial, landscaping, and agricultural (ILA) and specify the water supply source. Note, onsite alternative water is reported separately of non-potable fresh water use.*

LM used nonpotable city utility water during FY 2019 at the Piqua, Ohio, Decommissioned Reactor Site for the 2019 Piqua asbestos abatement project. In addition, LM used nonpotable water at the Mound, Ohio, Site for flushing toilets.

j. *Provide status of adopting and incorporating various Federal water management practices, such as landscape management, storm water runoff, siting for facilities, and disposition of unneeded property.*

LM utilizes project planning process tools such as PAE forms and SOWs to identify opportunities to reduce potable water consumption and ILA water usage and to identify or establish storm-water management requirements, as applicable.

LM's dispersed and often remote legacy sites would drive planning decisions for any new office locations. Whenever the mission allows for new offices, LM will consider locations that are pedestrian-friendly, near existing employment centers, or accessible to public transit. LM incorporates water management practices into all aspects of its mission. For its various sites, LM works with various regulators on any required storm-water runoff plans. In addition, LM adheres to the Guiding Principles and other requirements for high-performance and sustainable buildings (HPSBs) with respect to water management, including considerations for landscaping, when assessing potential sites for new LM offices.

5.0 Waste Management

This section covers LM's approach and vision for addressing waste management, pollution prevention (source reduction), recycling measures, and construction and demolition (C&D) waste reduction. The following Dashboard pages fall under the Waste Management category:

- Municipal Solid Waste
- Waste Diversion
- Wastewater Treatment

5.1 Waste Management Performance Status

5.1.1 Municipal Solid Waste and Waste Diversion

LM continued to remain committed to nonhazardous solid waste minimization and waste diversion from landfills during FY 2019. No major initiatives or changes to missions or facilities occurred in FY 2019 that contributed in significant ways to LM's waste management performance. LM uses only offsite solid waste management facilities.

In FY 2019, based on weight, LM diverted 50.7% of its nonhazardous solid waste, excluding C&D material and debris, from treatment and disposal in landfills. LM's performance achieved the annual goal of diverting a minimum of 50% waste from landfills established for this waste category. The waste diversion was accomplished through recycling. LM did not send any of this category of waste for treatment. In FY 2018, LM diverted 34.2% of this category of waste from landfills. Therefore, in FY 2019, LM had a 48% improvement in the diversion percent from the prior year.

A graph showing LM's performance in diverting nonhazardous solid waste (excluding C&D material and debris) from disposal in landfills for FY 2012 through FY 2019 is provided in Figure 6. Historically, waste diversion percentages of this category of waste have been variable.
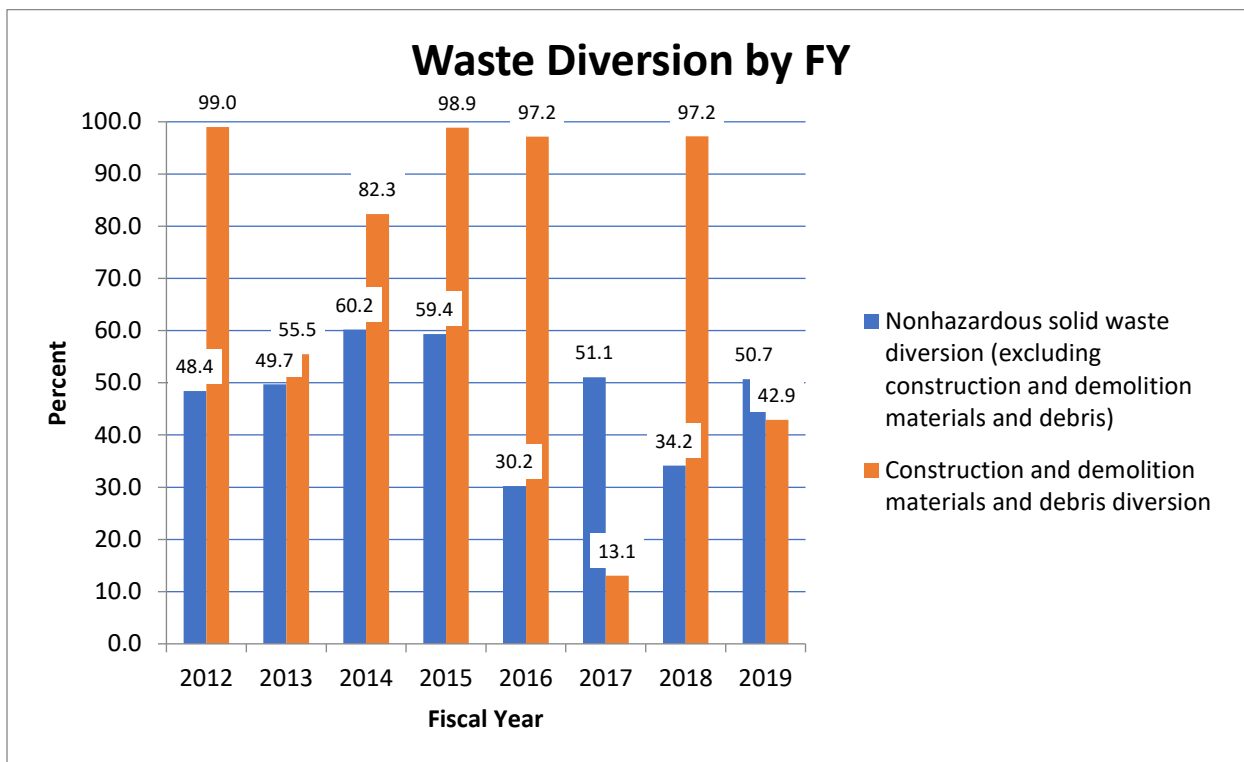
Waste Diversion by FY

Figure 6. Percent Waste Diverted from Landfills by Fiscal Year

In FY 2019, based on weight, LM diverted 42.9% of its nonhazardous C&D material and debris from treatment and disposal in landfills. The waste diversion was accomplished through reuse and recycling. LM did not send any of this category of waste for treatment. LM continued to track this information in FY 2019, even though there is no longer a formal, annual "waste diversion from landfill" goal associated with C&D material. Figure 6 shows LM's performance on C&D material and debris diversion from disposal in landfills for FY 2012 through FY 2019. Historically, waste diversion percentages for this category of waste have been variable, as they are dependent on the type of atypical project and the specific waste being generated.

A new goal was developed for C&D waste for FY 2019, which was to reduce the amount of C&D material and debris sent to treatment and disposal facilities each year. In FY 2019, LM sent 31.8% (24,713 pounds) less of this waste to disposal facilities in FY 2019, as compared to FY 2018. Thus, LM achieved this year over year improvement goal in FY 2019.

LM's FY 2019 waste management practices will remain mostly unchanged in FY 2020. FY 2020 management practices are discussed in detail in Section 5.2.

5.1.2   Wastewater Treatment

No major initiatives or changes to missions or facilities occurred in FY 2019 that contributed in significant ways to LM's waste management performance. LM continued to use both onsite and offsite wastewater treatment facilities in FY 2019, which, along with many other categories, contributes to Scope 1 and 2 and Scope 3 GHG emissions, respectively.

LM's FY 2019 wastewater treatment practices will remain mostly unchanged in FY 2020. FY 2020 best management practices are discussed in Section 5.2.

5.2 Waste Management Planned Actions and Projected Performance

LM will continue to be committed to pollution prevention through the implementation of policies and practices on waste minimization, source reduction, recycling, and waste diversion from landfills.

LM will continue to use both onsite and offsite wastewater treatment facilities and offsite municipal landfills for managing waste and does not anticipate any changes to this in FY 2020. LM does not use onsite nonhazardous solid waste landfills and does not anticipate any changes to this in FY 2020.

The continued increase in LM's scope and number of sites will increase staffing, which will increase wastewater and solid waste volumes to some extent. An increase in the number of visitors to different existing or newly opened LM sites' visitor centers is also expected, which will increase solid waste and wastewater treatment volumes. This will, in turn, result in increased GHG emissions from wastewater treatment and solid waste management facilities.

LM will continue to minimize waste and reduce pollution. In addition, it will perform the following planned activities:

- Continue to maintain federal and contractor policies for pollution prevention.
- Continue to consider ways to reduce, reuse, and recycle materials beginning in early project planning, and continue to use project-planning tools (e.g., PAE forms, SOWs) to facilitate waste minimization, sustainable purchasing (including use of recycled-content material), and waste diversion from landfills.
- Continue to use the *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies*, which 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.
- Continue to assess planned new purchases, waste streams, and chemical inventories for pollution prevention and waste minimization opportunities.
- Continue to increase the use of acceptable nontoxic or less-toxic alternative chemicals and minimize acquisition of hazardous chemicals and materials through sustainable purchasing.
- Continue to purchase only the appropriate quantities of products needed to perform the work.
- Evaluate nonhazardous waste recycling stations to determine whether changes are needed to increase participation and offset increases in population at staffed office sites.
- Share complex-wide pollution prevention messages.
- Utilize integrated pest management and landscape management practices to reduce pollutants to the environment.
- Continue to evaluate composting opportunities at LM sites for appreciable waste diversion from landfill opportunities. LM will consult with SPO and other DOE elements to determine if new approaches for composting have been developed that could present new opportunities for LM to consider.

The expected impact of these planned activities on future fiscal years is continued source reduction, pollution prevention, and waste minimization. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with waste management for FY 2020 include the following:

- Continue to (1) maintain spreadsheet inventories of recycled and reused materials; chemicals; universal wastes; and solid, hazardous, and radioactive wastes, and (2) update the inventories at least two times per year

- Continue to reduce the amount of (1) nonhazardous solid waste excluding C&D material and debris, and (2) C&D material and debris generated annually

- Divert nonhazardous solid waste, excluding C&D material and debris, from disposal in a landfill through recycling, and divert nonhazardous C&D material and debris from disposal in a landfill through reuse and recycling

Waste Management Strategies

The following provides responses to the additional SSP guidance discussion points on waste management strategies.

a. *Summarize the site's actions in FY 2019 on pollution prevention, waste reduction and minimization efforts, recycling, and composting programs. Please ensure these are accurately reported in the Dashboard to quantify the waste diversion from landfill due to these actions.*

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

LM staffed sites are primarily leased facilities with limited options for composting. LM has an absence of cafeteria services and landscaping responsibilities and no reserved space for composting at these locations. Some staffed sites have investigated options or tried collecting compostable material but encountered obstacles impeding those efforts, so efforts have been discontinued. Only one staffed site is collecting compostable material on a volunteer basis. Additionally, the Fernald Preserve, which does have larger amounts of outdoor organic material waste, will continue to use a passive compost operation with woodchip mulch piles. If the material is not reused as mulch onsite in the first year, it eventually breaks down and is used as an organic amendment for topsoil for onsite landscaping. Overall, compostable material at staffed sites will continue to represent only a very small percentage of LM's overall waste stream.

b. *Discuss current and planned efforts to divert both non-hazardous solid waste and construction/demolition waste from disposal in landfills.*

LM's efforts to divert both nonhazardous solid waste and C&D waste will continue to be achieved through project planning and decision making, with support from the LMS

Environmental Compliance group and Sustainability team representatives who will assist with assessing opportunities, collecting data, tracking progress, and reporting status. For LM, C&D material and debris typically vary and are generated during atypical, nonroutine projects, thus making it difficult to predict future waste generation quantities.

c. *Explain the anticipated impact of site mission and population changes, construction, demolition and disposition activities, etc. on recycling and waste generation rates and volumes (i.e. will non-hazardous solid waste/C&D increase or decrease in the upcoming five to ten years).*

Both the number of LM sites and personnel are increasing. Normally, slight changes in staffing would not significantly impact solid waste or C&D activities, but some planned building construction is anticipated in out years to help accommodate the growing staff. These construction projects could increase the amount of C&D material and debris. Changes to waste generation at new unstaffed sites should not be significant. Reuse and recycling opportunities are expected to remain generally the same at staffed sites. LM C&D activities generally vary greatly and are usually one-time project- and mission-driven activities, so it is difficult to predict waste generation rates and volumes for this category of waste. However, waste minimization and waste diversion practices are applicable for all project types. The projected increase in staff population as well as participation at various LM visitor centers will result in increased quantities of wastewater being generated, which will contribute to an increase in GHG emissions, but the increases should not be significant.

d. *If a waste-to-energy system is used, provide amount of waste diverted to the system(s) and ensure the information is reported in the Dashboard.*

LM does not use waste-to-energy systems.

e. *Explain how the site has been able to increase the use of acceptable non-toxic or less-toxic alternative chemicals and processes while minimizing acquisition of hazardous chemicals and materials (such as ozone-depleting substances and fluorinated gases).*

LM will continue to increase the use of acceptable nontoxic or less-toxic alternative chemicals and minimize acquisition of hazardous chemicals and materials by continuing to incorporate sustainable purchasing requirements and resources into the purchasing and procurement system. LM will continue to review 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 will continue to be approved through the procurement and job-planning processes. Purchases will continue to be marked with sustainability codes for tracking and evaluation. Ozone-depleting substances and fluorinated gases are used in a relatively small number of LM's overall operations and represent a small fraction of overall anthropogenic carbon-dioxide-equivalent emissions for the organization. Opportunities to eliminate the use of these products will continue to be assessed.

f. Discuss the integration of pest management and landscape management practices (as applicable).

LM will continue to apply 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 will continue to use a combination of biological, cultural, mechanical, and chemical methods to control weed infestations. LM has employed the following methods:

- Biological control methods in years past at several sites (e.g., Rocky Flats Site, Colorado; Lowman, Idaho, Disposal Site; Sherwood, Washington, Disposal Site; and Durango, Colorado, Disposal Site) by releasing insects that specifically target and damage the noxious plant species, and LM will continue to evaluate this option for future application.

- Cultural methods implemented at other sites have included (1) reseeding an area with native plant species to outcompete the weeds, and (2) coordinating treatment efforts with adjacent landowners to ensure everyone in the watershed is working together to control noxious weeds. Similar approaches will continue to be considered in the future.

- Mechanical methods have included hand-pulling, discing, and mowing, and these methods will continue to be used in the future.)

- Chemical methods can be used to control infestations when biological, cultural, or mechanical methods are ineffective or cannot be used (e.g., when no biological or cultural method exists, or when the terrain is too rough for equipment access). In most situations, LM uses a selective herbicide to target the invasive species only and not the desirable surrounding vegetation. LM will continue to evaluate new herbicides as they become available on the market to determine if they are an improvement (e.g., as effective, but less toxic to the environment and applicator) over the currently used herbicides.

Additionally, LM will continue to monitor and maintain control over noxious weeds, thus reducing the amount of terrain requiring treatment. These approaches will inherently reduce the volume of herbicides required to be purchased and used.

g. If the site has encountered any changes in recycling venues or fees, please describe.

In general, LM has not encountered changes in recycling venues or fees during FY 2019.

6.0 Fleet Management

This section covers LM's approach and vision for addressing fleet management. The following Dashboard pages fall under the Fleet Management category:

- Fleet Vehicle Fuel
- Fleet Vehicle Inventory
- Fleet Vehicle Mileage

6.1 Fleet Management Performance Status

Performance data is uploaded to the dashboard from FAST after reporting closes. Fleet data will be provided after the FAST data is loaded to the dashboard. In FY 2019, 100% of the eight light-duty acquisitions were alternative fuel vehicles (AFVs).

Major initiatives or changes impacting goals are described below.

The increase in LM's scope and number of sites expected by FY 2028 may affect LM's ability to accomplish the Fleet Management category goals. As more sites transition into postclosure and legacy stewardship, LM is forecast to add 28 sites by FY 2028, according to the LM 2019 *Site Management Plan* (Guide-3-20.0-1.0-20.3). As such, more vehicles will be needed to support those sites, making it difficult for LM to continue to meet the petroleum reduction goals.

Another factor making it increasingly difficult to meet petroleum reduction goals is the lack of alternative fueling infrastructure near many of LM's sites. Grand Junction fleet vehicles accounted for 76% of all miles driven for LM in 2019. The fueling stations in Grand Junction that provided ethanol fuel blend (E85) fuel recently stopped offering this fuel, which means the closest E85 fueling stations are 54 miles to the east and 517 miles to the west of Grand Junction.

GSA provides a limited selection of low-GHG-emitting vehicles in the class required by LM to achieve its mission. GSA has indicated that there will be only a small quantity of low-GHG-emitting vehicles available each year and they might not be in the size classes that are conducive for LM's work. LM's policy is to obtain E85-capable AFVs as alternatives when (1) low-GHG-emitting vehicles are not available or insufficient for the intended use and (2) E85 fuel is available and does not require an increased incurred cost.

There was no biodiesel infrastructure available in the locations that support LM's fleet operations to warrant acquiring biodiesel-capable vehicles.

Plug-in hybrids and zero-emission vehicles are not conducive to LM's work due to the remote locations of sites under the LM portfolio. These areas often do not have access to power or charging infrastructure. Additionally, the reduced engine power of those vehicles is not recommended for towing and are not very effective for rugged off-road travel where many of LM's sites are located. As such, this greatly limits the use of the vehicle to specific circumstances and could negatively impact utilization of those vehicles.

Lessons learned from the Defense-Related Uranium Mines (DRUM) Program was that there are no low-GHG-emitting vehicles that would adequately suffice for these mission needs of the DRUM Program for several reasons, including the following:

- **Spare tires:** Low-GHG-emitting vehicles often lack a spare tire. For original equipment manufacturers to meet efficiency standards, they reduced the weight of vehicles by replacing spare tires with fix-a-flat systems. In an off-road scenario, the type of tire damage caused by this environment most likely cannot be solved by a fix-a-flat system. Due to the fact that roadside assistance is not offered for off-road work and the lack of appropriate solutions for a flat tire while operating off-road, low-GHG-emitting vehicles are not the safest or most appropriate choice in most cases for LM to meet its mission.

- **Engine power:** Low-GHG-emitting vehicles lack the engine power necessary for (1) hauling the types of trailers LM has and (2) climbing steep mountain roads. Since a large portion of LM's work is in the mountains and on off-road terrain, low-GHG-emitting vehicles are not versatile enough to meet work requirements. Due to the limited power provided by low-GHG-emitting vehicles, a decrease in utilization for that vehicle is expected. In addition, there is an increased cost of having to acquire additional vehicles to support the needs of LM that the low-GHG-emitting vehicle could not.

- **Weather conditions:** LM's mission typically requires extensive engine-on time in locations that are remote to the vehicle garaging location. Additionally, LM has a policy to protect its travelling employees from weather and environmental hazards by using the GSA vehicles to keep employees warm or cool while performing their work. In an electric or hybrid vehicle, keeping the air conditioning and heater running at an idle, even for short periods of time, can drain batteries and create more safety issues for a worker.

- **Repair facilities:** Facilities that can repair and maintain electric or hybrid vehicles are generally not available in the remote locations where LM sites are located. This makes it unfeasible to keep electric and hybrid vehicles as part of LMS fleet.

These limitations increase costs, increase the number of trips and miles, negatively impact safety, and prevent LM from providing the equipment necessary to accomplish the mission.

LM calculated normalized values for petroleum fuel use based on the number of sites supported 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. LM performs work on sites that are not part of the LM site count such as the DRUM sites, to which travel varies. This results in a skewed normalization (i.e., over reporting of the fuel per site metric) but LM has not yet determined a better method to evaluate consumption as the mission increases.

As a best management practice, LM used virtual-presence meeting software to reduce both business travel and petroleum fuel use and their associated GHG emissions. In addition, LM replaced all light-duty vehicles with AFVs, depending on availability of the fuels, the intended use of the vehicle at the time of replacement, and the needs of the site or project.

6.2   Fleet Management Planned Actions and Projected Performance

Planned activities and their associated expected impact are further described in the LM/LMS *Fleet Management Plan* (LM-Plan-3-13-2.0, LMS/POL/S11157) (see Attachment 4). Through ongoing monitoring and reporting, LM strives to meet or exceed fleet sustainability goals to the extent allowed by the LM mission, and LM will identify and mitigate issues that contribute negatively to goal accomplishment. In addition, LM will perform the following planned activities:

- Maintain an inventory of vehicles, monitor the monthly fuel consumption and vehicle trip data, and take appropriate action to meet sustainability goals whenever possible.

- Attempt to increase the overall fuel economy of the fleet by working with GSA to acquire smaller, more efficient, and rightsized vehicles and by using other advanced-technology vehicles as the mission allows.

- Identify the most fuel-efficient vehicle for a given task by considering miles driven, fuel used, vehicle's intended use, and road types traveled.

- Use telematics data to better evaluate opportunities for further petroleum use reductions and alternative fuel use increases.

- Promote carpooling and use of video teleconferencing as the mission allows.

- Promote an increase in alternative fuel use for those areas with alternative fuel infrastructure and vehicles that operate on alternative fuels.

- Add reminders during LM's routine fleet communications to use E85 fuel and educate drivers with online and mobile tools that identify alternative fuel locations.

- Track E85 fuel use by each vehicle for reporting purposes.

- Monitor DOE's Energy Efficiency and Renewable Energy website to monitor any changes to E85 fuel infrastructure and availability near LM vehicle garaging locations.

- Update and include maps and station listings showing E85 fuel stations in all E85-capable vehicle black books, for easy reference by the drivers.

- Update training programs to include up-to-date information about alternative fuel use requirements and tools.

- 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 to provide onsite charging infrastructure to determine cost-effectiveness for the government and the taxpayer.

LM will continue to acquire alternative fuel capable light-duty vehicles when appropriate for the mission and when the alternative fuels are readily available. In addition, LM will evaluate the acquisition of charging infrastructure and zero-emission vehicles when LM's mission allows for passenger carriers. The expected impact of the planned activities is to meet or exceed the DOE goal without negatively impacting LM's mission or project task accomplishment. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with fleet management for FY 2020 include the following:

- Record and track vehicle-related data and produce monthly and quarterly summary reports that include information regarding AFV acquisitions, mileage, utilization, fuel use, and cost

- Report data into FAST, which reports a projected 3-year vehicle acquisition forecast that includes AFV acquisitions for all light-duty vehicles

- Evaluate normalization method as the mission increases

- Evaluate right-sizing the LM fleet while considering the increased use of rental or personal vehicles

Fleet Management Strategies

LM's responses to the additional SSP guidance questions (identified in italics) on fleet management strategies are below.

a. *Describe strategies for reducing petroleum use, such as fleet optimization, vehicle right-sizing, expanded use of alternative fuel, anti-idling measures, and use of vehicle telematics to assess fleet performance.*

LM encourages its employees to carpool and use teleconferencing or videoconferencing technology to alleviate the amount of travel required and thus reducing petroleum use. LM uses training programs, *ECHOutlook* EMS newsletters, monthly site safety meetings, lunch-and-learn sessions, and other trainings and demonstrations to promote and inform staff on how they contribute toward meeting LM's EMS goals. Trainings and job performance metrics include information and recommendations promoting LM's anti-idling policy and trip consolidation practices for projects, including conducting monitoring and other work remotely when possible. Successful accomplishment of these activities can be evaluated by the telematics data that is incorporated and used as fleet operational data for reporting and tracking purposes.

b. *Describe strategies for increasing alternative fuel use, such as increasing acquisition of AFVs, evaluating alternative fueling options through available locator tools, siting vehicles to match available fueling locations, and installing renewable fuel pumps at fleet fueling centers.*

LM uses the communication means discussed previously to effectively inform staff of available driver tools and appropriate vehicle use policies. One of the tools that fleet management promotes to staff is the mobile alternative fuel station locator app that can be downloaded from the Apple App Store or Google Play store, and the use of the https://www.afdc.energy.gov/ for locating alternative fuel stations in a location or along a route. LM will continue to look at E85-fuel-capable and low-GHG-emitting vehicles when evaluating replacements and new vehicle additions to the fleet. For all occupied LM sites that have E85 fuel stations near their location or along common routes to and from the garaging location, E85 maps are provided in the vehicle black book to help identify alternative fueling locations.

c. *DOE struggles with the EPAct 2005 Section 701 requirement, which requires that agencies use alternative fuel in all dual-fueled AFVs except in vehicles for which the agency received a waiver. Discuss the barriers faced by your site to utilize alternative fuel in all dual-fueled AFVs. How many waivers were requested and granted for FY 2019? If AFVs will be acquired that will not have access to alternative fuel, explain why.*

AFVs will not be ordered as new or as replacement vehicles for the LM fleet unless new infrastructure is identified or LM's mission allows for the use of low-GHG-emitting vehicles that can be counted as AFVs even when operated on conventional petroleum. In FY 2019, LM submitted 25 light-duty vehicles for waivers due to no E85 fueling infrastructure within a 15 minutes' drive time or 5 miles radius from an LM garaging location. LM is waiting for DOE Headquarters approval of those waivers.

d. *Describe the site's plan to meet the AFVs acquisition requirement.*

In FY 2019, eight new or replacement light-duty LM fleet vehicles were E85-capable vehicles. LM did not obtain any low-GHG-emitting vehicles because mission needs require pickup trucks or larger SUVs, which are not offered in a low-GHG-emitting configuration.

e. *Describe any major changes in fleet inventory during FY 2019.*

LM had five Flex Fleet Rental vehicles and two Barco Rent-a-Truck vehicles in FY 2019. One Flex Fleet Rental vehicle became a leased vehicle due to Title 41 *Code of Federal Regulations* Section 102-34.35 (41 CFR 102-34.35) and is consequently FAST reportable. These vehicles were used as supplements to the permanent fleet for additional project work that the current fleet could not address (e.g., spikes in seasonal fieldwork). These vehicles will be reported into FAST as additions to the LM federal fleet.

Additionally, it has been identified that although rental vehicles are not provided or managed through fleet management, LM is utilizing rental vehicles and privately-owned vehicles to support the existing permanent fleet. In identifying the appropriate right size for the LM fleet, the use of rental or personal vehicles to address these situations skew the data towards reflecting fewer fleet vehicles than what is required to meet the mission.

f. *Describe plans for increasing use of biodiesel or renewable diesel. Per EPAct 1992, the use of every 450 gallons of neat biodiesel or renewable diesel grants one EPAct Acquisition credit towards the EPAct AFV Acquisition requirement.*

There is no biodiesel fuel infrastructure located near most of LM's occupied sites, and the sites that do have infrastructure nearby do not have a vehicle need for diesel-motive power. There are no plans to acquire biodiesel-capable vehicles for the LM fleet.

g. *DOE struggles with the EPAct 2005 Section 701 requirement, which requires that agencies use alternative fuel in all dual fueled AFVs except in vehicles for which the agency received a waiver. Discuss the barriers faced by your site to utilize alternative fuel in all dual fueled AFVs. How many waivers were requested and granted for FY 2019? If AFVs will be acquired that will not have access to alternative fuel, explain why.*

AFVs will not be ordered as new or replacement vehicles for the LM fleet unless new infrastructure is identified or unless the LM mission allows for low-GHG-emitting vehicles that can be counted as AFVs even when operated on conventional petroleum. Twenty-five waivers were requested in FY 2019. LM is waiting for DOE Headquarters approval of those waivers.

h. *Discuss installation efforts for on-site vehicle charging and alternative fueling infrastructure.*

Due to the nature of LM work, vehicle charging infrastructure and electric vehicles are not conducive to the field work activities and the safety practices of LM, which require the cab of the vehicle to be maintained as a climate-controlled area for employee safety. The LM sites where there are large volumes of fleet vehicles are located on leased property. There is currently not an identified path for placing alternative fueling or electrical charging infrastructure onto leased property. There are no plans for adding charging or fueling infrastructure to LM's sites.

7.0   Renewable Energy

This section covers LM's approach and vision for addressing renewable energy resources. The following Dashboard pages fall under the Renewable Energy category:

- On-site Renewable Generation Systems
- Purchased Clean and Renewable Energy
- Efficiency and Conservation Measures

7.1   Renewable Energy Performance Status

LM's performance was 100% for renewable energy. Figure 7 shows renewable electricity from FY 2010 through FY 2019. There were no major initiatives or changes. LM adjusted the number of RECs to be in line with actual electricity usage.
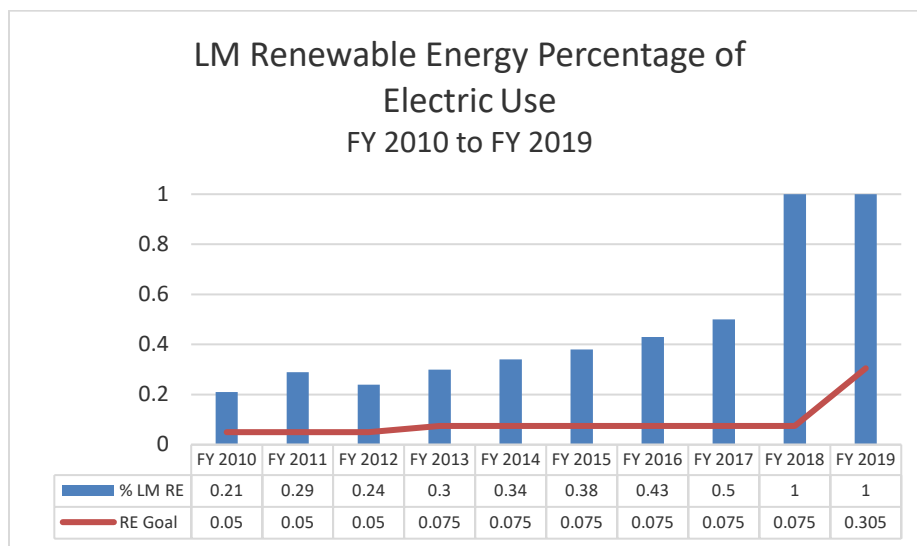
LM Renewable Energy Percentage of Electric Use
FY 2010 to FY 2019

	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
% LM RE	0.21	0.29	0.24	0.3	0.34	0.38	0.43	0.5	1	1
RE Goal	0.05	0.05	0.05	0.075	0.075	0.075	0.075	0.075	0.075	0.305

Figure 7. Renewable Electricity and Total Renewable Energy Performance Since FY 2010

One success was the preparation of a cost estimate to install a solar photovoltaic system at the Monticello site.

7.2   Renewable Energy Planned Actions and Projected Performance

LM will continue to investigate ways to increase renewable energy, with the expected impact to be a continued, albeit sporadic, increase in renewable energy use at its facilities. No additional funding is required to implement renewable energy actions beyond what is currently budgeted. Measurable goals and milestones associated with renewable energy for FY 2020 include the following:

- Review the number of RECs purchased from the Defense Logistics Agency (DLA) and make needed adjustments to meet any clean energy or renewable energy goals

- Monitor renewable energy goal performance as buildings using electricity enter the LM portfolio and take steps to ensure that goals continue to be met

- Expand the number of onsite renewable energy systems, where cost-effective

- Increase the use of SOARS to collect data from remote sites, where cost-effective

LM's responses to the additional SSP guidance questions (identified in italics) on renewable energy are below.

Recommended Charts, Graphs, or Tables

a. *Provide a chart showing renewable electric energy consumption in MMBtu relative to total electricity consumption broken out by: on-site, purchased green energy, and renewable energy credits (RECs).*

Figure 8 shows LM's renewable electric energy consumption relative to total electricity consumption broken out by onsite renewable energy, purchased green energy and RECs.

LM Renewable Electric Energy Consumption

	Total, Onsite RE, & Purchased Green Electricity & RECs
■ % Total Electricity	100%
■ % Onsite RE	27%
■ % Purchased Green Energy	3%
■ % RECs	63%
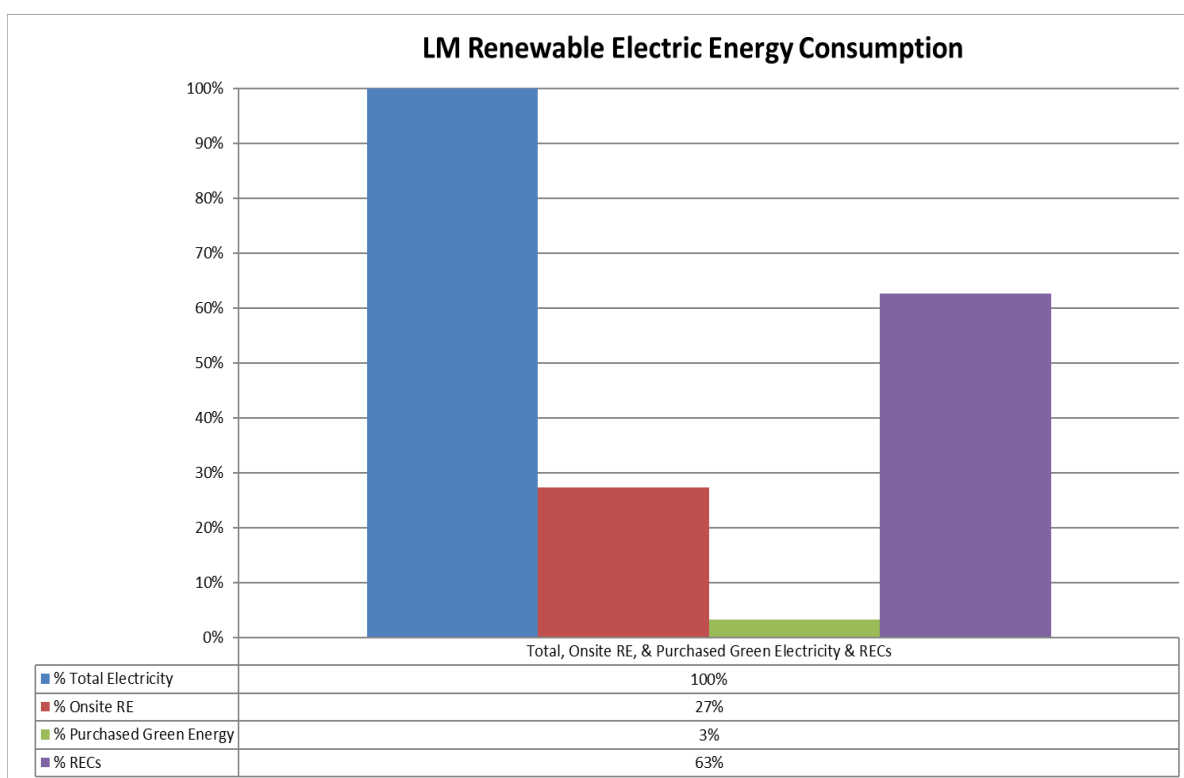
Figure 8. Renewable Electric Energy Consumption

Renewable Energy Strategies

a. *Summarize the site's strategy to increase and prioritize on-site renewable and alternative energy generation, including storage options. Please note that the Service Year Limits for Purchase of Green Energy & RECs has changed from 10 years to 15 years. Please verify the service year/installation year data in the Dashboard, as this should be the first year of service when energy was generated, not the current fiscal year. If the year is incorrect,*

submit a change request for Purchased Clean and Renewable Energy; however if a change is needed for Onsite Renewable Energy Generation Systems, please contact SPO.

There are 139 photovoltaic solar panel installations totaling 368 megawatts of capacity on LM sites. These panels produce 655 megawatt-hours (MWh) of electricity. LM will continue to research installation of additional renewable energy sources at its sites where it is cost-effective. LM will continue to purchase national RECs in order to offset GHG from electricity use as needed.

b. *Discuss highlights of major purchases and approaches taken to obtain renewable energy through purchases.*

LM adjusted the number of RECs purchased to offset electricity used from the grid in FY 2019. LM contracts with DLA to purchase RECs. LM counts these RECs toward its renewable energy performance. In addition, a percentage of electricity used at the Fernald Preserve is bundled green energy. LM purchased 3000 MWh worth of RECs and 160 MWh of bundled green electricity.

c. *Explain the most recent renewable and alternative energy assessments and outcomes, if applicable.*

Renewable energy feasibility studies were done in FY 2016. Existing renewable energy installations are reviewed during scheduled EISA energy evaluations.

d. *Describe the incorporation of DOE Procurement Policy Guidance on Purchase of Electricity, Energy Products, and Energy By-Products from Indian Tribes. This policy gives preference to tribes and tribal majority-owned businesses for the purchase of electricity produced by renewable resources, renewable energy products, and renewable energy by-products, as long as it is no more costly than the prevailing market rate.*

LM provides preference to tribes and tribal majority–owned businesses when issuing contracts to purchase electricity produced by renewable resources, renewable energy products, and renewable energy byproducts, as long as it is no more costly than the prevailing market rate.

e. *Describe how the installation of renewable energy systems in new buildings is considered and initialized; especially solar hot water heaters per Title 42 United States Code Section 6834(a)(3)(A) (42 USC 6834(a)(3)(A)).*

Installation of renewable energy systems in new buildings, including solar hot water heaters, is considered based on renewable energy feasibility studies and whether installation is life-cycle cost-effective.

f. *Discuss potential opportunities or needs for microgrids or energy storage at your site.*

No opportunities or needs have been identified.

8.0   Sustainable Buildings

This section covers LM's approach and vision for addressing green building initiatives, such as HPSBs, as well as building inventory changes. The following Dashboard pages fall under the Green Buildings category:

- Sustainable Buildings
- Facility Goal Category

- Building Inventory Change and Design

8.1 Guiding Principles

8.1.1   Guiding Principles Performance Status

LM has successfully met the sustainable buildings goal; 50% of LM's buildings comply with the 2016 Guiding Principles (GPs).

On July 11, 2019, LM was notified that the Fernald Preserve won the EPA second annual "National Federal Facility Excellence in Site Reuse" award for the NPL category. The Leadership in Energy and Environmental Design (LEED) Platinum–certified Fernald Preserve Visitors Center is the focal point of public activity at the site and contributed to the award. Exhibits in the Visitors Center depict the diverse history of the Fernald Preserve and tell the story from the time of the Native Americans, to the arrival of settlers and farmers, to the uranium-processing years, to the environmental cleanup and the legacy management period that continues today.

As a best management practice, LM evaluated the results of the HPSB occupant survey issued to the occupants of the new LM office at Westminster to assess their opinions regarding thermal comfort, acoustics, indoor air quality, lighting levels, building cleanliness, and any other comfort issues.

The Sustainable Building team successfully worked with the Energy team to identify no-cost or low-cost methods for sharing sustainability, energy, and water data with building occupants. The selected method will create awareness of how individual actions help LM achieve targets and goals and show progress toward meeting goals. This is undergoing approval by the IT group.

8.1.2   Guiding Principles Planned Actions and Projected Performance

LM will continue to assess and prioritize buildings greater than 5000 GSF for their potential to meet the GPs identified in *Determining Compliance with the Guiding Principles for Sustainable Federal Buildings* (Council on Environmental Quality, February 2016). The expected impact of LM's planned building assessments is identification of actions that lead to successful compliance with GPs. No additional funding is required to conduct these assessments beyond what is currently budgeted.

Since all buildings meeting the GPs will now count towards the goal, LM will begin considering sustainable improvements with the greatest cost efficiency gains at all buildings not just those that have matched the prior GSF threshold. In accordance with the Implementing Instructions for

Executive Order 13834, *Efficient Federal Operations*, the threshold for calculating sustainable building progress is based on owned buildings of 10,000 GSF or greater with bonus credit towards GSF progress for qualifying buildings below 10,000 GSF.

Measurable goals and milestones associated with GPs for Existing Buildings for FY 2020 include the following:

- Assess all LM-owned buildings greater than 5000 GSF for the GPs. The remaining owned buildings have not been assessed against the GPs due to size, use, occupancy, or exclusions. Buildings not excluded are evaluated as EISA Section 432–covered buildings, and energy-saving strategies will be implemented if cost-effective.

- Track utility usage for the recently increased square footage in the LM office at Westminster in Energy Star Portfolio Manager and support application for an Energy Star Tenant Space recognition (once the full, market-scale program is launched in mid-FY 2020).

- Once approval from IT group is received, work with the Energy team to develop a working pilot for an internal energy dashboard to communicate and monitor progress against sustainability goals.

LM's responses to the additional SSP guidance questions (identified in italics) on Guiding Principles are below.

Recommended Charts, Graphs, or Tables

a. *Include table of GPs compliant buildings to date and planned compliant buildings by count and GSF. Please include the year the building became compliant or is scheduled to be compliant.*

Table 6 provides an estimated timeline of GP building inventory through FY 2021

Table 6. Guiding Principles–Compliant Buildings

LM Owned Buildings > 5000 GSF	Square Feet	Percent GP Compliant			
		2008 thru 2018	2019	2020	2021
Fernald Preserve Visitors Center	10,800	100%	100%	100%	100%
Weldon Spring Interpretive Center (existing)*	10,663	54%	54%	54%	N/A
Weldon Spring Interpretive Center (replacement)**	24,500	N/A	N/A	N/A	100%
Building 7 at LM office at Grand Junction	18,900	TBD	TBD	TBD	TBD
% GP Compliant by Building Count		50%	50%	67%	100%
% GP Compliant by Square Footage		50%	50%	77%	100%

Notes:
* Estimated disposition year 2021.
** Planned building with estimated occupancy 2021.

Abbreviations: TBD = To be determined

Guiding Principles

a. *Provide the number of buildings that qualify as sustainable buildings in FY 2019, identify FY 2020-2021 priorities for advancing sustainable building progress (i.e., targeted sustainable buildings), and if possible, provide a timeline for at least 15% or greater of buildings (by count and associated GSF) meeting the GPs.*

One of two LM-owned buildings, both > 5000 GSF, qualified as a sustainable building in FY 2019. The Fernald Preserve Visitors Center received LEED Platinum certification in 2008. The new Weldon Spring Site Interpretive Center, currently under construction, is on track to meet the GPs; completion is planned for late FY 2020. Building 7 at the LM office at Grand Junction is 18,900 GSF but remains unoccupied and has minimal energy use. Future development of the building is under discussion.

b. *Discuss barriers to meeting GPs in remaining facilities, including identifying the GPs most difficult to meet.*

Budgetary reductions would be the only barriers preventing LM from meeting the GPs in the remaining owned or incoming facilities greater than 5000 GSF.

c. *Ensure Facilities Information Management System (FIMS) sustainability fields and the Dashboard Sustainable Buildings fields are accurate, consistent, and up to date. **Note:** the Federal definition of "not applicable" is outlined in the 2019 Guidance for Real Property Inventory Reporting as any building that meets the following conditions: unoccupied (< 1 hour/person/day on average), low/no energy use (< 12.7 kBtu/GSF/year), and low/no water use (< 2 gallons per day (GPD)). Ensure that FIMS data reflects this change and discuss the impact.*

FIMS data reflects the Federal definition of "not applicable" and is reviewed annually to maintain accuracy. There are no major impacts to FIMS.

d. *Describe your site's incorporation of Federal GPs and sustainable practices into institutional documents, procedures, and processes, including site planning documents, policies, specifications, etc.*

The GPs and related assessment processes have been incorporated into the LM/LMS *Environmental Management System Teams Manual* (LM-Manual-3-20.3-1.0, LMS/POL/S11374), *Real Property Management* (LMS/POL/S04335), *Facility Management Plan* (LMS/POL/S05299), and *LM Office Space Siting Plan* (LMS/S18950).

8.2 New Building Design

8.2.1 New Building Design Performance Status

There were no new buildings completed in FY 2019. Construction of the Weldon Spring Site Interpretive Center began in late FY 2019 with occupancy planned to take place in FY 2021. It is on track to comply with the GPs.

8.2.2   New Building Design Planned Actions and Projected Performance

The build-out of suites adjacent to the LM office at Westminster was planned to be completed in October 2019, adding 8400 square feet to the existing space. GSA guidelines were used for development of the space to maximize the use of the available square footage.

Available workspace at some other office locations is over, at, or near capacity for employees. Measures to increase space are being investigated including the reuse of existing Building 7 at the LM office at Grand Junction.

The expected impact of LM's planned new building design is successful compliance with energy efficiency standards and the GPs. No additional funding is required to complete these evaluations beyond what is currently budgeted.

LM's site-specific measurable goals and milestones associated with new building design in FY 2020 include the following:

- Continue to provide sustainability support to projects by including language and requirements to meet energy efficiency standards in project plans, using space optimization practices, and incorporating climate-resilient design and management elements into the design of new LM buildings

- Continue to apply sustainability practices to the maximum extent practicable in new leases for facilities greater than 10,000 rentable square feet (RSF) leased directly by LM or the LMS contractor if reimbursed by LM

New Building Design

LM's responses to the additional SSP guidance questions (identified in italics) on new building design are below:

a. *Identify any new Federal buildings owned, operated, or controlled by the site, for which designs were started in FY 2007, and construction completed in FY 2019 (and asset entered into FIMS in FY 2019). Additionally, please identify any buildings that do not meet or exceed the Federal building efficiency standards and explain why they did not meet the requirements. Discuss mechanisms by which the site does – or plans to – ensure all new construction is designed at 30% more energy efficient than the baseline established by ANSI/ASHRAE/IESNA Standard 90.1. As of August 2019, the current version in effect is ASHRAE 90.1 2013 (10 CFR 433.100).*

No new buildings were constructed in FY 2019. The existing Interpretive Center at the Weldon Spring site was assessed for the 2008 GPs in 2010. While minor energy efficient upgrades have been made to the building as needed over the years, bringing it up to the federal building efficiency standards wasn't considered cost-effective. The new Interpretive Center, currently under construction, is on track to meet the 2016 GPs.

LM ensures that new construction SOWs include requirements to be 30% more energy efficient than the baseline established by the American National Standards Institute (ANSI); American Society of Heating, Refrigerating, and Air-Conditioning Engineers Inc. (ASHRAE); and Illuminating Engineering Society (IES) in ANSI/ASHRAE/IES Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings.*

b. *Discuss, if applicable, any provisions in building leases pertaining to energy conservation or sustainable design.*

Sustainability considerations continue to be of paramount importance to LM and will be applied to the maximum extent practicable in new leases for facilities greater than 10,000 RSF leased directly by LM or by the LMS contractor if reimbursed by LM.

The build-out of suites adjacent to the LM office at Westminster will be completed in October 2019, adding 8400 square feet to the existing space. GSA guidelines were used for development of the space to maximize the use of the available square footage. The additional space was designed to include the same high-performance sustainability goals and green building design goals as were applied to the existing LM office at Westminster, which opened in FY 2018.

c. *Discuss strategies for design in regard to 42 USC 6834 fossil fuel reduction in new buildings and major renovations.*

In contracts to design new buildings, LM will include requirements to follow ASHRAE standards for energy efficiency requirements, utilize space optimization practices, and install renewable energy (where cost-effective), which will result in fossil fuel reductions.

d. *Describe plans to incorporate climate-resilient design and management elements into the design of new or newly retrofitted buildings.*

LM plans to incorporate climate-resilient design and management elements into the design of its new buildings to the extent feasible. The new Interpretive Center and staff administration building at the Weldon Spring site has entered the construction phase. Throughout the entire design phase, the design team supported the incorporation of the 2016 Guiding Principles for Sustainable Federal Buildings, which includes Guiding Principle VI, "Assess and Consider Climate Change Risks."

The final design for bringing all site overhead wiring underground and upgrading the site electrical components to a safer and more efficient configuration has been completed. Other upgrades are scheduled to be completed in FY 2020. The building is strategically located in an area on the site to minimize impacts from potential flooding or wildfires should they occur within the surrounding natural areas. It is designed to be highly energy efficient and structurally sound to withstand severe weather. Two solar-powered storm shelters were installed on site in FY 2014. Climate-resilient design features shall continue to be evaluated in future planning and design phases of the overall site master plan.

9.0   Acquisition and Procurement

9.1   Acquisition and Procurement Performance Status

In FY 2019, 100% of new contract actions, under new and existing contracts, included requirements for products and services to (1) be energy efficient (Energy Star or Federal Energy Management Program [FEMP]–designated), water efficient, BioPreferred and biobased, environmentally preferable (including EPEAT–registered products), non-ozone-depleting, and nontoxic or less toxic, and (2) contain recycled content, as reported in the DOE Sustainability Dashboard. LM does not do any subcontracting. As a best management practice, the LMS contractor flows these requirements down to their subcontractors.

9.2   Acquisition and Procurement Planned Actions and Projected Performance

LM will continue to promote sustainable acquisition and procurement to the maximum extent practicable, ensuring BioPreferred and biobased provisions and clauses are included in 95% of applicable contracts. In addition, LM will perform the following planned activities:

- 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 requiring the supply or use of environmentally preferable or sustainable products and services

- Emphasize the requirement for federally mandated, designated products in all procurement actions as necessary through bimonthly team meetings of the acquisition group

- Attend the DOE bimonthly sustainable acquisition teleconference/webinar to stay abreast of what other DOE programs and DOE contractors are doing to purchase sustainable products and services

The expected impact of the planned activities is to meet or exceed the DOE goal. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with sustainable acquisition and procurement for FY 2020 include the following:

- Include the required language to ensure that products and services will be green or sustainable in the LMS contractor's procurement terms and conditions for all commodities and services

- Ensure that 95% of EPA and U.S. Department of Agriculture–listed products and services purchased, excluding all purchases made with credit cards, are environmentally preferable or sustainable as subject to certain qualifications

- Track compliance with the goal of purchasing 95% sustainable products and services (including tracking for the quarterly performance assurance summary reports and LM's annual reporting on FedCenter website and in the Dashboard)

- Require that purchases of noncompliant energy-efficient products have written preapproval from a subject matter expert

LM's responses to the additional SSP guidance questions (identified in italics) on sustainable acquisition strategies are below:

a. *Describe your site's efforts to maximize acquisition of sustainable products.*

All purchases are reviewed by the Contracts Services department to determine if sustainable opportunities exist. If they do, the contract administrator is directed to purchase the sustainable product. Any deviations must be approved by the LMS Contracts Services department manager.

b. *Detail your site's efforts to include BioPreferred and biobased provisions or clauses in eligible contract actions and how you track the procurement of biobased products.*

BioPreferred and biobased provisions are included in all construction, service, and commodity contract actions.

c. *Describe your site's plans to review and implement EPA's recommendations for specifications, labels, and standards that designate environmentally preferable products and services.*

All products purchased through service and commodity contract actions contain specifications, labels, and standards designating environmentally preferable products and services, where those products meet LMS performance and cost standards.

10.0   Measures, Funding and Training

This section covers LM's approach and vision for implementing identified ECMs via appropriations, performance contracts, or other funding mechanisms, and this section discusses sustainability-related training and education for employees. The following Dashboard pages fall under the Measures, Funding, and Training category:

- Efficiency and Conservation Measures
- Appropriations/Direct Obligations
- Training and Education

10.1 Efficiency and Conservation Measures

10.1.1 Efficiency and Conservation Measures Performance Status

Two ECMs were installed. HVAC units were replaced with more energy-efficient models on the Monticello site office trailer, and a solar-powered gate was installed at the Grand Junction disposal site.

Completed the design to reduce the power supplied to the entire Weldon Spring site from an approximately 1278 kVA supply to an approximate demand load of 200 kVA.

As a best management practice, the installation of a photovoltaic solar system was investigated for the Monticello site and an estimate was developed.

10.1.2 Efficiency and Conservation Measures Planned Actions and Projected Performance

LM will continue to pursue the identification of ECMs. The expected impact of these activities on future fiscal years is continued reductions in energy and water use and GHG emissions. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with ECMs for FY 2020 include the following:

- Prioritize and implement identified ECMs

- Reduce the number of deferred maintenance tasks identified for energy-consuming buildings and facilities annually, as funding allows

- Complete CASs for all DOE-owned and DOE-leased buildings and trailers, and for OSFs, on a 5-year schedule, as required by DOE Order 430.1C Chg 1

- Continue to reinvest cost savings realized from ECMs, where applicable

LM's responses to the additional SSP guidance questions (identified in italics) are below.

a. *Ensure Dashboard data for this section is accurate and up to date. If a measure is no longer viable, please change the status to cancel. The information on measures is used for reporting EISA §432 compliance. U.S. Office of Management and Budget (OMB) and the Council on Environmental Quality (CEQ) review EISA §432 compliance ECM data annually and have updated the agency scorecard to include progress on ECM implementation as a progress indicator. Sites and programs integrate this data with their budget process. SPO is having discussions with programs on how best to implement and integrate sustainability related ECMs with the budget process.*

Data was checked for accuracy and uploaded into the Dashboard.

b. *Describe your site's strategies and tools for prioritizing and implementing measures (e.g. Life-Cycle Cost Analysis).*

LMS site leads and LM site managers review audit reports and select projects on which to implement efficiency measures, primarily by evaluating life-cycle costs of the project. LM utilizes life-cycle cost analysis, which results in implementing measures having a payback time of 25 years or less. In addition, LM considers impacts to the environment and sustainability goals in the decision process. Energy team members will coordinate with LMS site leads, LM site managers, and engineering staff to develop projects. LM accounting and technical staff perform in-depth reviews of the most promising proposals.

c. *Discuss M&V efforts of implemented measures and be sure to report findings in the Dashboard.*

LM does not have any projects funded through an ESPC and so is not statutorily required to perform M&V. However, LM performs M&V on implemented ECMs during EISA Section 432 evaluations.

d. Explain obstacles, other than limited budget, for implementing projects, such as low utility costs or high security costs.

LM utilizes guidance provided by the FEMP program and OMB to perform life-cycle cost analysis. In addition, LM will be using the Building Life Cycle Cost Programs developed by the National Institute of Standards and Technology to help provide computational support for the analysis of efficiency measures.

e. Do you have an internal tracking or funding mechanism for using energy saving for financing additional measures?

The LM process for tracking energy savings to facilitate reinvestment into future ECMs is being finalized.

10.2 Performance Contracts

10.2.1 Performance Contracts Performance Status

During FY 2019 LM projects did not meet the monetary requirements for a performance contract. The Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) funding opportunity announcement information was presented to LMS site leads, but no projects were identified.

10.2.2 Performance Contract Planned Actions and Projected Performance

LM will evaluate projects for use of an ESPC or other alternative funding mechanism during the planning process. In addition, LM will perform the following planned activities:

- Determine the cost-effectiveness of projects but also consider the implementation of new technologies for demonstration purposes, the facilitation of technology and information transfer, and the accomplishment of deferred maintenance tasks. This includes studying and applying cost-effective, new technologies that enhance protectiveness.

- Continue to refine the scope and estimated implementation costs for projects, evaluate funding sources for financial and technical rigor, and seek appropriate funding sources over the next 5 years for those life-cycle cost-effective projects.

- Continue to pulse and educate site leads on performance contracting and AFFECT funding opportunities.

Despite the implementation of these actions, LM does not expect to contribute to DOE obtaining the performance contract goal due to the nature of LM sites and activities. No additional funding is required to implement these actions beyond what is currently budgeted.

Measurable goals and milestones associated with performance contracts for FY 2020 include the following:

- Evaluate expanding the usage of new technologies such as remote sensing, telemetry, and drone-based sensors with instruments to improve site monitoring efforts while reducing costs, natural resource use, and business travel–related GHG emissions, and achieve sustainability goals

- Pursue additional training on estimating costs, scheduling, and preparing return-on-investments and simple paybacks

- Continue to examine reinvestment potential to use realized cost savings from ECMs

LM's responses to the additional SSP guidance questions (identified in italics) on performance contracts are below.

a. *Summarize how private financing is integrated and considered as part of site project planning and budget formulation activities.*

LM does not consider private financing as part of the site project planning and budget formulation activities.

b. *Characterize and provide examples of efforts to leverage alternative financing such as ENABLE, ESPC, utility energy service contracts (UESCs), and Power Purchase Agreements (PPA).*

LM investigated the use of the ESPC ENABLE program for funding to replace the HVAC system at the Fernald Preserve Wastewater Treatment System Optimization project, but the replacement cost was below the minimum value of 2 million dollars.

c. *Identify specific resources or support needed to increase the implementation of ESPCs, Utility Energy Service Contracts, or ENABLE.*

LM currently has no planned projects that meet ESPC or ENABLE criteria.

d. *Describe the site's approach for evaluating project potential, noting projects that have been evaluated (and either awarded or not awarded) in the past 5 years. Please indicate if no projects have been considered in the past 5 years and if your site is considering them in the near future.*

The following projects have been evaluated and either awarded or completed in the past 5 years:

- Completion of the redesigned and downsized Converted Advanced Wastewater Treatment (CAWWT) system at the Fernald Preserve

- Replacement of the HVAC system at the CAWWT system at the Fernald Preserve

- Replacement of the HVAC system at the Weldon Spring laboratory building

- Design and construction of a new Weldon Spring Site Interpretive Center

- Design and reduce the power supplied to the entire Weldon Spring site from an approximately 1278 kVA supply to an approximate demand load of 200 kVA

- Installation of solar-powered air stripper installation for East Trenches Plume Treatment System Reconfiguration Project at the Rocky Flats site

- Replacement of parking lot lighting fixtures and installation of high-efficiency LED lights at the Fernald Preserve

e. If applicable, identify the most significant barriers to implementing performance contracting at your site (i.e. cost of providing security, energy service companies (ESCO) accessibility of secure areas).

LM energy-saving projects are small in dollar amount and typically do not save enough energy for a utility company to be interested in funding.

f. If applicable, describe any challenges to using alternative finance vehicles and provide recommended solutions.

LM typically does not have any projects expensive enough to warrant the use of a performance contract. Many of LM's sites are in remote locations and do not have facilities associated with them. It would be helpful if there were alternative funding options available for lower dollar amounts.

10.3 Appropriations and Direct Obligations

10.3.1 Appropriations and Direct Obligations Performance Status

In FY 2019 LM implemented the following energy efficiency projects:

- Finalized design of the new Interpretive Center at the Weldon Spring site
- Finalized design to reduce the power supplied to the entire Weldon Spring site
- Downsized the CAWWT system at the Fernald Preserve

As a best management practice LM documented the process they have been using since 2009 to reinvest verified monetary savings from sustainability projects into new sustainability projects, consistent with federal regulations, 42 USC 8256(e), and DOE guidance in the *DOE Financial Management Handbook,* Chapter 15, "Cost Accounting."

10.3.2 Appropriations and Direct Obligations Planned Actions and Projected Performance

LM plans to implement energy-efficiency projects that could reduce EI compared to the FY 2003 baseline. The expected impact of these activities is a continued reduction in energy usage. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with appropriations and direct obligations for FY 2020 include the following:

- Work with USACE to determine path forward for utilization of Building 7, a building acquired at the LM office at Grand Junction.
- Construct the new Interpretive Center at the Weldon Spring site.
- Complete construction to match load/demand with the supply since presently approximately 1300 kVA is supplied to the site and it only requires about 200 kVA. Also, the old overhead lines will be placed underground to reduce maintenance and safety issues.

LM's responses to the additional SSP guidance questions (identified in italics) on appropriations and direct obligations are below.

a. *Provide all FY appropriations and direct obligations for facility efficiency improvements, including facility surveys/evaluations. These are obligations for energy and/or water efficiency incurred from appropriated funds, revolving fund accounts including Saving Reinvestment Programs, or other accounts. This data set is included in the FEMP Workbook and the OMB Scorecard and must be updated annually. If you are unable to provide this information, please explain.*

Table 7 provides fiscal year appropriations and direct obligations for facility efficiency improvements, including facility surveys and audits.

Table 7. LM Appropriations and Direct Obligations FY 2019–FY 2021

		Estimated annual energy savings anticipated from obligations		Estimated annual water savings anticipated from obligations	
Fiscal year	**Obligations for facility energy and water efficiency improvements, including surveys and audits (thousands of dollars)**	**Energy cost savings (thousands of dollars)**	**Energy savings (MMBtu)**	**Water cost savings (thousands of dollars)**	**Water savings (thousands of gallons)**
Actual FY 2019	752.34	0	0	0.00	0
Projected FY 2020	3619.56	0	0	0.00	0
Projected FY 2021	17.34	5.2	207	0.10	1

Abbreviation:
MMBtu = million Btu

b. *Characterize and provide examples of efforts to integrate long-term sustainability goals into the budget process. This should include descriptions of the following:*

1. *Site's overall funding strategy and prioritization methodology*
2. *Savings reinvestment programs*
3. *Third party financing opportunities*

LM plans budgets for the EMS, including sustainability, and specific EMS projects for 5 out-years. During the process, LM identifies the major sustainability goals and related activities (e.g., EISA evaluations or annual reporting events). LM funds specific projects through its site-specific budget process. Site leads coordinate with budget specialists during life-cycle baseline budgeting to include sustainability figures. To account for funding changes, team leads and LM budget specialists 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. Each 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 other 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.

Since 2009, LM has utilized a reinvestment process to ensure that cost savings associated with ECMs are evaluated and reinvested as required by DOE Guide 430.1-1, *DOE Cost Estimating Guide*; *DOE Financial Management Handbook Chapter 15, Cost Accounting*, and DOE Order 436.1, *Departmental Sustainability*. Figure 9 outlines the current process. This process is scheduled to be formalized and incorporated into existing procedures in FY 2020.

Flowchart to Decide if Project Cost Savings are Required to be Reinvested
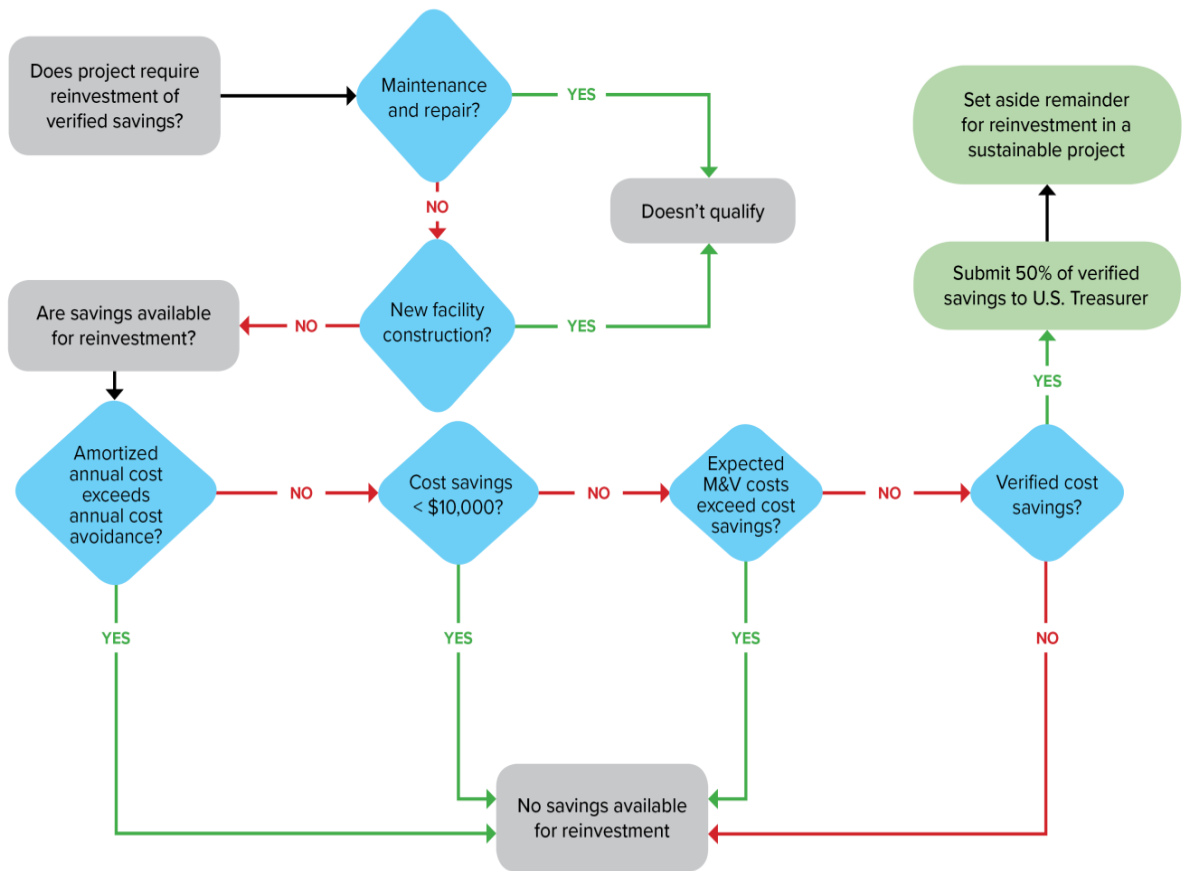
M&V - Measurement and Verification

Figure 9. Energy and Water Savings Reinvestment Process Flowchart

LM does not consider private financing as part of the site project planning and budget formulation activities. LM utilized an interagency agency agreement between LM and the U.S. Army Corps of Engineers to design the new Weldon Spring interpretive center in FY 2019 and to construct the facility in FY 2020/2021.

10.4 Training and Education

10.4.1 Training and Education Performance Status

Sustainability teams and Environmental Compliance staff worked with the EMS training team to update the EMS General Awareness training to address Executive Order changes and changes in the ISO Standard 14001, *Environmental Management Systems — Requirements with Guidance for Use.*

As best management practices, LM:

- Developed and published sustainability awareness articles in the internal quarterly newsletter, *ECHOutlook.* Related posters, contests, and activities sometimes accompanied the articles to encourage sustainability-related behavior change.

- Delivered presentations with more specific discussion of EMS-related topics and needed actions to increase awareness at All-Hands meetings, monthly safety meetings, and meetings with management and project planning personnel.

- Tracked training completions and notified managers when an individual's training was overdue.

10.4.2 Training and Education Planned Actions and Projected Performance

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

- Maintain the certified energy manager's certification.

- Identify an additional person to take energy manager training.

- Continue to look into the online GSA Federal Facilities Management Training Tool for tracking core competencies to ensure facility energy managers can demonstrate their core competencies as identified by GSA in the Federal Buildings Personnel Training Act of 2010.

The expected impact of these planned activities is increased awareness of sustainability practices and increased LM staff knowledge. No additional funding is required to implement this training beyond what is currently budgeted.

LM's responses to the additional SSP guidance questions (identified in italics) on training and education are below.

a. *Describe efforts to ensure facility energy managers can demonstrate core competencies for facility managers as identified by GSA per the Federal Buildings Personnel Training Act of 2010 (FBPTA).*

   LM's certified energy manager takes annual courses to maintain certification. In FY 2019, the manager took classes on renewable energy technologies, metering, data center electrical systems, and building automation systems.

11.0 Travel and Commute

This section covers LM's travel and commute data and addresses participation in regional and local planning. Traveling and commuting contribute to LM's GHG emissions. The following Dashboard pages fall under the Travel and Commute category:

- Air Travel
- Ground Travel
- Commute

11.1 Travel and Commute Performance Status

In FY 2019, LM continued to add sites nationwide and increase work activities and staffing. LM also experienced the greatest amount of work to date in FY 2019. These additions resulted in an increase in LMS air travel in FY 2019 (an increase of 41.4% over FY 2018), and an increase in commuter travel for LMS and LM personnel (an increase of 23% over FY 2017, as described in the "Commute Strategies" section in Section 11.2), which contributed to Scope 3 GHG emissions. Commuter travel and air travel are major Scope 3 GHG emissions contributors. Business ground travel in this category included personal vehicle use, vehicle rentals, leased vehicles, taxi use, and mass transit business travel. In FY 2019, this category was slightly lower than FY 2018 business ground travel Scope 3 GHG contributions for LMS.

LM's federal air travel and business ground travel data were not available at the time of this document's publication, so only partial data is currently available; performance for LM's FY 2019 Scope 3 GHG emissions cannot be included in this report. The goal for Scope 3 GHG is to have a year over year emissions reduction from a FY 2008 baseline. Given the increase in commuter travel and LMS air travel, it is possible that this goal may not be achieved for FY 2019.

LM's FY 2019 travel and commute practices will remain mostly unchanged in FY 2020. FY 2020 management practices are discussed in Section 11.2.

11.2 Travel and Commute Planned Actions and Projected Performance

LM continues to be committed to reducing GHG emissions associated with traveling and commuting. In addition, LM will perform the following planned activities:

- Continue to evaluate and implement methods to consolidate and reduce business ground and air travel

- Continue to implement fleet management vehicle and fuel use requirements to help reduce air emissions

- Continue to follow best management practices to reduce travel to remote sites by combining different functional activities into one trip; consolidating work at adjacent or en route sites into one trip; carpooling to the extent possible for business travel; and using videoconferences, teleconferences, and instant messaging in place of in-person meetings

- Continue to pursue installation of additional renewable energy SOARS systems where cost-effective, and maintain operation of the existing system, to help reduce travel

- Allow flexible workweeks to reduce commute time (e.g., four 10-hour days) and work to increase telecommuting options through mutual alternative work agreements designed to reduce commuting days

- Continue to use the Cisco TelePresence Management Suite tracking and reporting tools to track videoconferencing and provide an estimated carbon dioxide savings report

- Continue to share business rental cars or to use mass transit while attending out-of-town meetings and events

- Continue to use webinars to enhance job skills, as well as using other seminars and training sessions provided by federal and state agencies and educational institutions, in place of traveling to in-person trainings

- Continue to encourage employees to carpool and to use public transportation to the extent possible during their commute to work

The expected impact of these planned activities on future years is continued reductions in GHG emissions from travel and commuting. However, mission changes, including the addition of sites to LM and increases in staffing, will affect ground and air travel. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with traveling and commuting in FY 2020 include the following:

- Continue to track all travel sources and update datasheets at a minimum frequency of once per year

- Conduct a new LM/LMS commuter survey in FY 2020 to reflect new updated staff commuter information, if appropriate

- Continue efforts to reduce overall travel-related GHG emissions

The following provides LM's responses to the additional SSP guidance discussion points identified for travel and commuting.

Business Travel Strategies

a. *Discuss policies and/or programs to reduce business travel including teleconferencing/video conferencing and outfitting conference rooms with video or collaboration equipment.*

Because of the nationwide distribution of LM sites, travel is an integral part of day-to-day activities. LM uses teleconferencing services and virtual-presence software to conduct some meetings and training. Where feasible, LM personnel share business rental cars or use mass transit while attending out-of-town meetings and events. LM will continue to reduce business travel to the extent practical.

Commute Strategies

a. *Describe policies and/or programs that promote carpooling, vanpooling, use of public/mass transit, telework, hoteling, electric vehicle use, and/or alternative work schedules.*

At this time, LM has no formal policies and/or programs that promote carpooling, vanpooling, use of public/mass transit, office hoteling, and electric vehicle use. Flexible work schedules and teleworking are used, which helps reduce LM commuter travel.

b. *Describe any rideshare, campus bike share, transit subsidy programs, park and ride systems, or preferred parking for car/van pools, electric vehicles or hybrids.*

At this time, LM has no formal sponsored rideshare, campus bike share, or park-and-ride system, largely because of the nationwide distribution and remote nature of its sites. Federal employees at the LM office at Westminster are eligible to receive reduced prices on public bus passes as part of a transit subsidy program. Although there is no preferred parking for carpools or van pools at any of the LM sites, the LMBC at Morgantown and the Fernald Preserve have preferred parking for electric vehicles and hybrids. LM may consider expanding the preferred parking program in the future to encourage increased environmentally preferred commuter practices.

c. *Discuss existing or plans for new electric vehicle charging stations for fleet and workplace reimbursable charging.*

LM's mission requires the use of four-wheel-drive vehicles and long-distance driving. Most LM sites are in remote locations without buildings, so workers depend on vehicles as climate-controlled areas (to warm up or cool down) to meet worker heat stress safety and health requirements. This type of use in battery-powered vehicles would stress the batteries and precludes the use of electric vehicles for most LM work. Electric vehicle charging stations for workers' personal vehicles do not exist at the LM sites and there are no current plans for installing charging stations in the future.

d. *Describe any strategies to engage employees through commuter awareness recognition or rewards programs. Describe strategies to increase communication about reducing single occupancy vehicles.*

LM does not currently have any specific commuter awareness recognition or reward programs but may consider implementing one in the future. LM will use information gathered from the FY 2020 LM/LMS commuter survey to further identify opportunities in this area.

e. *For employee commuting, provide a description of the methodology used for gathering information. If a survey was used, provide a copy. If a survey is not used, please describe any barriers to conducting a commuter survey. Include an estimate of commuter/employee contribution to site GHG emissions.*

LM conducted a commuter survey of all LM and LMS staff (excluding LM staff at the Forrestal office, who are included in the DOE Headquarters survey) in October 2017 to obtain commuter data. The survey is included in Attachment 5. Staffing has increased since the survey was conducted but survey results have been adjusted to reflect current staffing

numbers. In accordance with FY 2017 Dashboard information, commuter/employee contributions to LM's GHG emissions were 1108.9 metric tons of carbon dioxide equivalent. This estimated number increased by 23% in FY 2019 compared to FY 2017, due to staffing number increases. This increase changed LM's Scope 3 GHG emissions commuter/employee contributions to 1363.9 metric tons of carbon dioxide equivalent in FY 2019.

f. Discuss site participation in regional transportation planning, recognition of existing community transportation infrastructure, and incorporation of such efforts into site policy and guidance documents.

LM sites are generally located on former processing or disposal sites in remote locations. Therefore, they are not typically pedestrian friendly, accessible to public transit, or near planned town centers. LM does not participate in public regional transportation planning and does not address this in existing site policies or guidance documents other than for emergency planning.

12.0   Fugitives and Refrigerants

This section covers LM's approach to managing fugitive gases and refrigerant emissions, which contribute to Scope 1 GHG emissions. The following Dashboard pages fall under the Fugitives and Refrigerants category:

- Fugitives and Refrigerants

12.1 Fugitives and Refrigerants Performance Status

No major initiatives or changes to missions or facilities occurred in FY 2019 that contributed in significant ways to LM's fugitive gases and refrigerant Scope 1 GHG emission performance.

LM's FY 2019 fugitives and refrigerant management practices will remain mostly unchanged in FY 2020. FY 2020 management practices are discussed in Section 12.2.

12.2 Fugitives and Refrigerants Planned Actions and Projected Performance

LM continues to be committed to reducing GHG emissions associated with fugitives and refrigerants. LM plans to conduct the following activities:

- Continue to track fugitive gas and refrigerant uses and inventories via internal tracking documents

- Continue to look for improvement opportunities and, when possible, acquire less toxic alternative chemicals or choose alternative equipment not containing fugitive gases or refrigerants

- Continue to inspect chemical containers and gas cylinders as necessary to reduce potential spills and leaks

The expected impact of these planned activities is continued reductions or eliminations of fugitive gases and refrigerants and an overall reduction in Scope 1 GHG emissions in future

fiscal years. No additional funding is required to conduct these actions beyond what is currently funded.

Measurable goals and milestones associated with management of fugitive gases and refrigerants for FY 2020 include the following:

- Continue to maintain a spreadsheet inventory of fugitive gases and update the inventory at least once per year

- Evaluate the capability of the proposed Safety and Health chemical inventory software to determine if it will track fugitive gas use over a reporting period and if it would provide appropriate data for sustainability reporting

- Continue to maintain a spreadsheet inventory of refrigerants and update the inventory at least two times per year

- Continue efforts to reduce Scope 1 GHG emissions

Fugitives and Refrigerants Strategies

The following provides LM's responses to the additional SSP guidance discussion points identified for fugitive gases and refrigerants.

a. *Discuss current FY fugitive emissions, plans to reduce emissions, and/or expected increases along with net impact. Please note that all fugitives and refrigerants are required to be reported regardless of usage amount.*

Fugitive emissions are a small fraction of LM's Scope 1 GHGs. 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. The combined fugitive emissions are less than 1 metric ton of carbon dioxide equivalent. LM will continue to inspect chemical containers and gas cylinders as necessary to reduce potential spills and leaks. The use of additional fugitive gases associated with increased sampling may occur as additional sites are transferred to LM. However, LM does not expect significant increases or impacts from fugitive emissions, and when possible, will work to reduce them.

b. *Specifically, for sulfur hexafluoride (SF$_6$), discuss inventory management, monitoring, and control techniques, capture systems and storage equipment, leak detection and repair, preventive maintenance programs used to minimize releases, and any site plans/efforts to further reduce SF$_6$ use or emissions.*

LM does not use or maintain SF$_6$ in its inventory. This will remain true in the future and thus discussions on capture and storage equipment, leak detection and repair, preventive maintenance programs, and site reduction plans are not relevant.

c. *Identify alternatives that are being considered/tested to replace SF$_6$.*

LM does not use or maintain SF$_6$ in its inventory.

d. Identify new program requirements that may increase the use of SF$_6$.

LM does not use or maintain SF$_6$ in its inventory and there are no new program requirements that may require the use of SF$_6$.

13.0 Electronics Stewardship

This section covers LM's approach and vision for addressing electronics stewardship. The following Dashboard pages fall under the Electronics Stewardship category:

- Electronics Acquisition
- Electronics Operations
- Electronics End-of-Life

13.1 Electronics Acquisition

13.1.1 Electronics Acquisitions Performance Status

LM exceeded the interim target. It was determined that 99.73% of eligible acquisitions in FY 2019 were EPEAT-registered products, exceeding the requirement to purchase at least 95% EPEAT-registered products. For the third year in row, LM was awarded the EPEAT Purchaser Award. Table 8 shows LM's 2019 EPEAT purchases.

Table 8. FY 2019 EPEAT Purchases

Electronics	Total Number Acquired	EPEAT-Registered			Total Number EPEAT-Registered	EPEAT Compliance
		Bronze	Silver	Gold		
Desktop computers	1	0	0	1	1	100%
LCD monitors	153	0	2	150	152	99.35%
Notebook computers	207	0	0	207	207	100%
Tablets	7	0	0	7	7	100%
Printers	2	0	1	1	2	100%
Multifunction devices	5	3	1	1	5	100%
Facsimile machines	1	1	0	0	1	100%
All eligible electronics	376	4	4	367	375	99.73%

Abbreviation:
LCD = liquid crystal display

13.1.2 Electronics Acquisition Planned Actions and Projected Performance

LM will continue procuring EPEAT-registered products at current compliance levels in accordance with DOE requirements. The expected impact will be to continue to achieve goals related to electronics acquisition. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with electronics acquisition for FY 2020 include the following:

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

Acquisition Strategies

LM's responses to the additional SSP guidance questions (identified in italics) on electronics acquisition strategies are below.

a. *Discuss fiscal year's electronics purchases and break down of EPEAT-registered and ENERGY STAR certified acquisitions.*

See Table 8 in Section 13.1.1.

b. *Describe policies and procedures that require and ensure acquisition of EPEAT-registered and ENERGY STAR certified electronic office products when procuring electronics in eligible product categories.*

LM policies and procedures require the procurement of EPEAT-registered products and Energy Star certified electronic office products when procuring electronics in eligible product categories.

c. *Describe barriers your site faces in procuring EPEAT-registered electronics.*

LM has not experienced any barriers purchasing EPEAT-registered electronic.

13.2 Electronics Operations

13.2.1   Electronics Operations Performance Status

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

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

13.2.2   Electronics Operations Planned Actions and Projected Performance

LM will continue to enable power management capabilities on eligible equipment to ensure attainment of the goal. The expected impact will be to continue to achieve goals related to electronic operations. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated electronics operations for FY 2020 include the following:

- Continue conserving energy usage at all LM data centers. LM plans to continue the virtualization process where applicable. Virtualization allows for one server to perform the function of up to 100 individual servers, which results in a reduction in direct power usage and a reduction in cooling needs.

- Continue phasing out physical hardware servers for the more electronically efficient virtual-machine technology whenever possible. A variety of benefits are realized, including a smaller footprint and reduced cooling and overall power requirements, as well as scaling back on the pervasiveness of electronic components in operation.

- Pursue efficient use of desktop, laptop, or notebook systems, merging use where possible to reduce the number of devices in operation. Minimize the number of systems existing in general office space, including the number of duplicate desktop and laptop or notebook computer systems.

- Enable automatic duplexing capabilities by default on eligible equipment to ensure attainment of the goal.

- Phase out locally attached, personal-use printers, facilitated by the secure printing option now available on all network-managed multifunction devices at all locations. The growing use of shared network devices will contribute to the ongoing reduction of paper, printing supplies, and power usage.

- Implement best practices from the DOE Guide 436.1-1, *Federal Sustainable Print Management*.

Operations Strategies

LM's responses to the additional SSP guidance questions (identified in italics) on electronics operations strategies are below.

a. *Describe policies and procedures that require and ensure the enabling of Energy Star power management features (e.g. sleep, standby, hibernate) on all eligible electronic products (e.g., computer desktops, laptops, and displays).*

LM administers power management on all desktop and laptop systems, which extends to digital displays and printers, via network group policy, and which 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.

Individual electronics can be exempt from the power management goal if they are used for mission-critical functions, such as site security or uninterruptable laboratory experiments. All power management exemptions are managed by the LM Help Desk. The Help Desk creates a ticket to document requests and the Network Management team adds the system to an exemption group, which is enforced via Windows Group Policy.

b. Describe policies and procedures that require and ensure the enabling of automatic duplexing (print jobs double-sided by default) is enabled on all eligible electronic products (e.g. computers, printers, scanners multifunction/all-in-one devices, fax machines).

End users may be given the option to manually select single-sided printing for individual jobs, either on their computers or on individual imaging equipment.

Individual electronics can be exempt from automatic duplexing if they are incapable of automatic double-sided printing, or if the equipment is primarily used for print and copy jobs required to be single-sided. Otherwise, print drivers for all network printers are configured for duplex printing by the Network Management team.

LM will continue to set automatic duplexing capabilities on eligible equipment to ensure attainment of the goal.

13.3 Electronics End-of-Life

13.3.1 Electronics End-of-Life Performance Status

LM remains committed to using environmentally sound disposition options (reuse or recycling) to manage end-of-life electronics during FY 2019. No major initiatives or changes to missions or facilities occurred in FY 2019 that contributed in significant ways to LM's used electronics performance.

In FY 2019, LM managed 100% of its end-of-life electronics through environmentally sound disposition options, thereby achieving DOE's annual performance goal in FY 2019. These sound disposition options included prioritizing reuse over recycling. Reuse included transfer to other government agencies, resale, and donation through appropriate local donation avenues such as donating electronics to schools. All recycling occurred using certified electronic recyclers. LM also achieved the 100% annual environmentally sound disposition goal for used electronics during FY 2018, which is a zero percent performance change between FY 2019 and FY 2018.

LM's FY 2019 electronics end-of-life management practices will remain mostly unchanged in FY 2020. FY 2020 best management practices are discussed in detail in Section 13.3.2.

13.3.2 Electronics End-of-Life Planned Actions and Projected Performance

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

- Continue to track and manage electronics' end-of-life data

- Monitor appropriate electronics reuse and recycling opportunities, and choose reuse over recycling, when possible

- Ensure onsite accumulation of electronics to be recycled is managed in accordance with applicable requirements and using best management practices

- Ensure electronic recyclers are legitimate, and ensure they use environmentally sound and legal environmental practices prior to sending items for recycle

- Ensure that the end-of-life electronics inventory is disposed of in an environmentally sound manner as promptly as possible to eliminate excessive quantities of used electronics from accumulating at LM sites

The expected impact of these planned activities on future fiscal years is that LM will be able to continue to appropriately manage all used electronics through reuse and recycling. No additional funding is required beyond what is currently budgeted to support this effort.

Measurable goals and milestones associated with electronics end-of-life management for FY 2020 include the following:

- Track and manage data on all LM electronics eligible for reuse

- Track and manage data on all LM electronics recycled

- Disposition 100% of used electronics in an environmentally sound manner through reuse and recycling

End of Life Strategies

LM's responses to the additional SSP guidance discussion points (identified in italics) on end-of-life strategies are below.

a. *Describe policies and procedures that require and ensure used electronic assets are disposed through required environmentally sound disposition practices: reuse and donation through GSAXcess; donation through GSA's Computer for Learning (CFL) program or to other eligible State and non-profit organizations; recycling through Federal operations such as UNICOR or USPS BlueEarth; and/or recycling through a private recycler certified under the Responsible Recycling (R2) program or the e-Stewards® program.*

   As a best management practice, LM's IT and Personal Property groups will continue to develop and refine the process for tracking and disposing of old electronic equipment. When disposition of equipment occurs, IT will coordinate with the Personal Property group to provide pictures for posting to the GSAXcess site. If selling the equipment is not an appropriate option, it will be donated through appropriate local donation avenues established to facilitate reuse. Recycling is viewed as a last resort if sale or other reuse is not a viable option. All LM electronic recycling will continue to be facilitated through certified recyclers.

   LM procedures identified in the LMS *Personal Property Management Manual* (LMS/POL/S04336) require that all personal property excess actions involve Personal Property personnel. All electronics that can be reused within LM will be transferred. However, LM will also use GSAXcess to disposition excess electronics through interagency transfers, the GSA Exchange/Sale authority, and the Computers for Learning Program. LM will use the services of an R2- or eSteward-certified recycler to collect and recycle electronics identified as waste and not reusable.

13.4 Data Centers

13.4.1 Data Centers Performance Status

LM data centers lack separate metering, which makes accurate power usage effectiveness (PUE) calculation impossible. LM is pursuing power metering at the data centers in Morgantown and Grand Junction.

13.4.2 Data Centers Planned Actions and Projected Performance

LM will continue to effectively utilize power associated with new or existing data centers to ensure attainment of the PUE target. The expected impact of LM's effective power use is continued compliance with the PUE target. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with data centers for FY 2020 include the following:

- Optimize the configuration of LM's data centers by monitoring data center power consumption in accordance with Federal Data Center Consolidation Initiative (FDCCI) standards and through LM's ongoing server virtualization effort

- Observe and follow all guidance and metrics as determined by FDCCI standards

- LM will be installing software to measure server utilization effectiveness

Data Center Strategies

LM's responses to the additional SSP guidance questions (identified in italics) on data centers are below.

a. *Describe your site's strategy for data center consolidation and optimization.*
   - LM completed data center consolidation in FY 2012.
   - The Network Management team's proposed metering plan is currently under review.

b. *If applicable, describe your site's strategy for ensuring energy and water efficiency in HPC data centers and exascale operations.*
   LM does not have HPC data centers or exascale operations.

14.0   Resilience

This section covers LM's approach and vision for resilience. The following Dashboard pages fall under the Resilience category:

- Resilience Questionnaire

14.1 Resilience Performance Status

LM continued to pursue the resilience objectives identified in the LM *2016–2025 Strategic Plan*; LM policies and procedures; the LM FY 2017–FY 2021 *High Performing Organizational Plan*; and DOE orders, Executive Orders, and other directives. These objectives align with DOE resilience objectives that include the ability to adapt to changing conditions, to withstand and recover from disruption, and to manage risks to LM assets, infrastructure and operations.

During FY 2019, LM conducted a variety of risk and vulnerability assessments to identify threats and hazards to different aspects of the LM program and implemented a variety of emergency and security measures:

- An LM Applied Studies and Technology (AS&T) study, "Enhanced Cover Assessment Project," began at the Grand Junction disposal site. The study is designed to evaluate (1) the conversion of conventional engineered disposal cell covers into more sustainable evapotranspiration covers and (2) more efficient methods for long-term performance monitoring.

- LM completed the pilot vulnerability screening report for the Monticello site using the DOE vulnerability screening tool to identify areas of vulnerability for a representative LM site. The screening evaluated the importance of site assets to the mission, the main climate stressors that would impact the site, and the adaptive capacity of an asset exposed to a given climate stressor.

- LM completed all scheduled emergency drills and tabletop exercises. An LM and LMS *Emergency Management Program External Assessment* (EMPR-AR-01) was performed to evaluate LM's compliance with DOE Order 151.1D Chg 1, *Comprehensive Emergency Management System*.

- A periodic facility condition assessment occurred at the LMBC at Morgantown in FY 2019. There are no facility condition assessments scheduled for FY 2020.

- The LM *Site Security Plan* (LMS/POL/S11558) was updated in February 2019 and site security assessments for all occupied locations in the LM complex were conducted as well. While no specific new hazards were identified during the assessments, a continued approach to be proactive in security at sites is underway.

- The SOARS program assets were added to the personal property inventory, data loggers and modems are included in the definition of cybersecurity equipment that requires additional control. Tracking began in April 2019 for current cybersecurity equipment at remote LM sites.

- A call center established in FY 2019 gives any person at an LM site the ability to report an emergency. This allows for quick notification to the associated LMS site lead as well as a rapid response to any emergency.

14.2 Resilience Planned Actions and Projected Performance

LM will continue to pursue the resilience objectives identified in Section 14.1 and will continue to pursue compliance with any new requirements or changes to existing requirements unless directed otherwise. The expected impact to future fiscal years is better integration and cross-functional coordination of these considerations into planned activities and site management. This

may require changes in organizational direction, funding allocation, and resource considerations based on the guidance from CEQ and DOE on Executive Order 13834, *Efficient Federal Operations,* and other directives. No additional funding beyond what is currently funded is required.

Specific measurable goals and milestones for FY 2020 include:

- An upcoming AS&T study, "Risk-Informed Cover Performance Priorities," will categorize and rank LM's Uranium Mill Tailings Radiation Control Act sites that have conventional disposal cell covers. The ranking will be based on the cell covers' vulnerability to changes in engineering properties, associated risks to human health and the environment, and suitability for future management as evapotranspiration covers.

- Accomplishment of all cybersecurity tracking across all LM's remote sites will be evaluated by May 2020.

- The Emergency Management (EM) group will create an implementation plan and schedule that identifies the components, activities, and completion dates to bring the EM Program into full compliance with DOE Order 151.1D Chg 1.

- EM will hire a skilled hazards analyst to revise the All Hazards Survey (AHS) for verifying that core program requirements are adequate for all LM sites/facilities/activities. The results of the AHS are expected in November 2019.

- LM and LMS EM staff will coordinate with offsite agencies as applicable to encourage the development of memoranda of understandings, memoranda of agreements, mutual aid agreements, and/or letters of agreement directly related to emergency management, emergency response, and law enforcement. Currently, no agreements exist. In addition, LM and LMS EM staff will pursue relationships with external Emergency Response Organizations (EROs) and resources, as needed, around LM sites and activities in FY 2020.

Resilience Strategies

LM's responses to the additional SSP guidance questions (identified in italics) on organizational resilience strategies are below.

a. *Discuss plans to conduct a detailed, site-specific risk/vulnerability assessment to identify threats and hazards that could adversely affect mission, programs, plans, operations, and personnel. If an assessment has been conducted within 5 years, sites are only required to provide an update in the dashboard if any changes are made to the plan.*

   The last recorded Threat and Hazard Identification Risk Assessment (THIRA) analysis was conducted in FY 2017 in accordance with the U.S. Department of Homeland Security *Comprehensive Preparedness Guide (CPG) 201*. The purpose of the FY 2019 *Emergency Management Program External Assessment* was to examine the overall health, compliance, and effectiveness of the LM and LMS EM Program functional areas as stipulated in DOE requirements outlined in DOE Order 151.1D Chg 1, and to determine what is needed to implement measures that will help LM fulfill the requirements of that DOE order.

   IT has been continually updating and testing what are called "Disaster Recovery Plans." There also have been disaster recovery exercises that included server restoration and

application recovery, both in total and partially. Tabletop exercises continue to occur to practice these processes with other areas. This improves the response and enhances the knowledge of these groups that are dependent on IT systems to function. Additionally, the Data Center Operations team tests the capability of restoring files, directories, drives, and complete systems on a quarterly basis.

b. *Describe resiliency plans for infrastructure and systems that would provide adequate energy and water supplies, facility operations, information and communication technology capability, and transportation availability when needed. For instance, sites should maintain mobile assets that can adapt to changing conditions and assist with mobilizing resources to meet their mission. Include interdependencies when appropriate (i.e. black start capability).*

LM has 139 solar voltaic systems producing 697,000 kilowatt-hours (kWh) per year of electricity. Of that, panels producing 649,000 kWh/year are connected to the electrical grid. Almost 100,000 kWh of bundled renewable electricity was purchased in FY 2019 and 3000 RECs amounting to 3,000,000 kWh of electricity were purchased.

All LM sites are equipped with an uninterrupted power supply for conditioning power to the systems and protecting them from power issues that could occur internally or externally.

The Data Center Operations team is in the process of upgrading the backup and recovery application that supports all the LM data processing environments. Tape robots are scheduled to be replaced in FY 2020. These changes will enhance LM's capability to restore connectivity quickly and be more responsive to the needs of both LM and LMS personnel.

In FY 2019 the LM office at Grand Junction had plans and specifications prepared for the addition of generators to supply power to Buildings 2 and 46 in the event of a power outage. This would at a minimum keep the data lines and servers operational. The actual installation of the generator project is pending.

The LMBC has a standby emergency power generator which provides back-up power to the data center and life safety systems. The Current generator is nearing the endo of its useful life, and replacement is under consideration.

The LMS Facilities Management group is looking at standardizing the use of self-monitoring surge protectors throughout all the sites. Self-monitoring surge protectors are beneficial in that they use an LED light to indicate whether the unit is functioning correctly if the LED light is off, then the operator knows the surge protector needs to be replaced.

Even though most of the LM sites are at a Facility Security Level II and do not require very stringent security upgrades, LM and LMS continue to use best practices in (1) recommending security camera installations or updates and (2) changing to LED lighting for better security footprint and for reaching our sustainability goals with reduced overhead and long-term cost. LM has been moving towards a digital upgrade on existing camera systems and new camera installations to further these goals.

c. Describe proactive measures during the previous fiscal year that revised, enhanced, or modernized emergency response procedures. Discuss the integration of emergency response procedures with resilience measures at the site.

The EM Program is evolving. EM is developing a comprehensive set of emergency plan administrative procedures and emergency plan implementing procedures that define (1) how the LM and LMS EM Program will be administered both before and after an emergency occurs and (2) performance instruction for ERO membership in completing activities and assignments. Some of the processes and procedures currently under consideration and development include:

- Administrative documents that define how the EM training and drill program will be conducted, how readiness assurance will be performed, how the emergency public information process is performed, and how emergency facilities and equipment will be tested and maintained.

- Defining all ERO roles and provide proper training. In addition, LM will develop procedures and checklists for each of those positions, and then train and drill the ERO staff until they are proficient in their roles. To support the ERO, LM will consider technology solutions that would allow responders at multiple DOE sites to share a common operating picture.

- Establishing additional screening thresholds for hazardous chemicals to ensure quantities are maintained below the thresholds identified for EM core programs in DOE Order 151.1D Chg 1.

- Ensuring all workers at LM sites receive required biennial EM training and understand (1) what types of protective actions they may be asked to take and (2) what their responsibilities are related to reporting incidents.

- Conducting an annual full-scale evaluated exercise that will be rotated annually amongst the various occupied sites to test all components of the ERO, Emergency Operations System staff, and facility workers that could be affected by an incident. Develop a 5-year drill and exercise plan.

- To better prepare for emergencies, the LM office at Grand Junction added several automated external defibrillator devices and first aid kits throughout the buildings.

Attachment 1

LM Environmental Policy

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Procedure: 436.1C
Effective: 2/22/2017

SUBJECT: ENVIRONMENTAL POLICY

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

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

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

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

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

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

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

    Management will ensure that this policy and our EMS

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NO. OF PAGES/ATTACHMENTS: 3 pages, 0 attachment

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

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

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

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

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

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

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

LM evaluates our environmental performance using the following:

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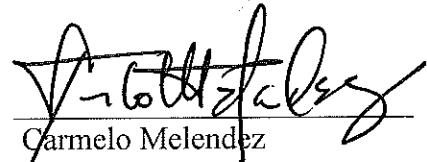- Quarterly oversight assessments.

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NO. OF PAGES/ATTACHMENTS: 3 pages, 0 attachment

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

Approved: _____
Carmelo Melendez
Director
Office of Legacy Management

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

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Attachment 2

LM Excluded Building Certification Letter

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Department of Energy
Washington, DC 20585

DOE BUILDING EXCLUSION
SELF-CERTIFICATION FORM
FY 2019

MEMORANDUM FOR SUSTAINABILITY PERFORMANCE OFFICE

FROM: DAVID P. McNEIL, SENIOR REALTY OFFICER
OFFICE OF LEGACY MANAGEMENT, LM 13

SUBJECT: Self-Certification Form for the Energy Intensity Goal of EISA 2007

Each building or group of buildings excluded under the criteria for Part C or Part D is metered for energy consumption and their consumption is reported annually. One building is excluded under criteria for Part E as it is currently vacant and down-scaled operationally to prepare for major renovation or demolition.

I certify that the buildings listed on the EUI Excluded Facilities report produced by the Dashboard as dated November 21, 2019 for Office of Legacy Management meet the exclusion criteria in *Guidelines Establishing Criteria for Excluding Buildings* published by FEMP on January 27, 2006.

David McNeil, Senior Realty Officer

Digitally signed by David P. McNeil
Date: 2019.11.21 12:02:21 -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: (313) 410-4817
E-Mail:tracy.ribeiro@lm.doe.gov

U.S. Department of Energy
DOE Sustainability Dashboard
Energy Consuming Excluded Facilities List in Accordance with
Section 543(c)(3) of the National Energy Conservation Policy Act as amended by the Energy Policy Act of 2005

Property Program Office	Property Name	Property ID	Real Property Unique ID	Property Type	Ownership	Gross SqFt	Excluded Facilities SqFt	Exclusion Part	Exclusion Justification
LM	BUILDING 7	GJO-BLDG-BUILDING7	218560	Building	DOE Owned (O)	18900	18900	E - Skewed Energy Usage	Not occupied; LM considering future plans
LM	DELTA BUILDING	FER-BLDG-OFFICE	203707	Building	DOE Leased (D)	10408	10408	C - Fully Serviced Lease	Lessor pays all utilities
LM	EQUIPMENT STORAGE SHED	RFS-BLDG-EQUIPSTOR	140115	Building	DOE Owned (O)	1118	1118	D - Essentially Only Lighting	Solar panels provide power to lights only inside structure.
LM	FOX BUILDING DOWNTOWN	GJO-BLDG-FOXBUILDING	218561	Building	Contractor Leased (C)	2819	2819	C - Fully Serviced Lease	Contractor leased
LM	LEGACY MANAGEMENT BUSINESS CENTER	AWV01804	207229	Building	GSA Leased (L)	58990	58990	C - Fully Serviced Lease	GSA Leased - Fully Serviced
LM	RTC LEASE-BUILDING12	GJO-BLDG-B12	208138	Building	DOE Leased (D)	11753	11753	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BUILDING2	GJO-BLDG-B2	208140	Building	DOE Leased (D)	2263	2263	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BUILDING32	GJO-BLDG-B32	208137	Building	DOE Leased (D)	4741	4741	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BUILDING810	GJO-BLDG-B810	204554	Building	DOE Leased (D)	23206	23206	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BUILDING938	GJO-BLDG-B938	208135	Building	DOE Leased (D)	19182	19182	C - Fully Serviced Lease	Fully Serviced Lease
LM	RTC LEASE-BULDING 46	GJO-BLDG-B46	211272	Building	DOE Leased (D)	3890	3890	C - Fully Serviced Lease	Full Serviced Lease
LM	RTC LEASE-LOG CABIN	GJO-BLDG-CABIN	216249	Building	DOE Leased (D)	3231	3231	C - Fully Serviced Lease	Fully serviced lease
LM	STAR CTR OFFICE PORTION OF LEASE	PIN-BLDG-OFFICE	143457	Building	Contractor Leased (C)	1330	1330	C - Fully Serviced Lease	Fully serviced lease

Property Program Office	Property Name	Property ID	Real Property Unique ID	Property Type	Ownership	Gross SqFt	Excluded Facilities SqFt	Exclusion Part	Exclusion Justification
LM	STORAGE SHED BUILDING 2A	GJO-BLDG-STORSHED	207408	Building	DOE Owned (O)	336	336	D - Essentially Only Lighting	Building is DOE-owned; however, power source comes from utility line from other leased facilities and is paid through fully serviced leased contract on other leased buildings. Shared meter.
LM	STORAGE SHED1	MNT-BLDG-STORSHED1	208390	Building	DOE Owned (O)	260	260	D - Essentially Only Lighting	Shed only uses minimal lighting. Shared meter.
LM	STORM SHELTER	WEL-BLDG-STORMSHELTR	215411	Building	DOE Owned (O)	560	560	D - Essentially Only Lighting	Solar panels provide power only to lights inside structure.
LM	STORM SHELTER 2	WEL-BLDG-STORMSHLTR2	216164	Building	DOE Owned (O)	560	560	D - Essentially Only Lighting	Solar panels provide power only to lights inside structure.
LM	WESTMINSTER OFFICE SPACE LEASE	WST-BLDG-OFFICE	204031	Building	DOE Leased (D)	19124	19124	C - Fully Serviced Lease	Fully Serviced Lease
LM	WINDOW ROCK LEASED SPACE	WNR-TRLR-OFFICE	217590	Trailer	Contractor Leased (C)	780	780	C - Fully Serviced Lease	Contractor leased

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Attachment 3

LM Water Conservation Plan

This attachment is Section 2.3 from the *Environmental Management System Teams Manual*

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This is an excerpt (Section 2.3) taken from the Environmental Management System Teams Manual (LM-Manual-3-20.3-1.0-0.0, Doc. No. S11374-1.0)

2.3   Water Conservation Team

The Water Conservation (WC) Team promotes water conservation at LM sites and offices by identifying ways LM sites and offices can use water more efficiently and, when possible, reuse water.

2.3.1   Purpose

The purpose of this WC Team plan is to systematically manage LM's potable water and industrial, landscaping, and agricultural (ILA) water (nonpotable) use at applicable LM sites and comply with EO 13693, DOE Order 436.1, and other applicable regulations (e.g., EISA, EPAct, and NECPA).

2.3.2   Scope of Water Conservation Plan

LM sites that are subject to compliance with EO 13693 goal requirements are referred to as "Goal Metrics sites." These include all LM sites or portions of sites that meet the following criteria:

- LM uses potable water, ILA water, or both, at the site and the federal government owns the site and LM administers it with support from its prime contractor *or*

- The federal government owns the site, LM administers it and leases it to another entity, and LM or its contractor directly pay the water utility bill *or*

- The site is privately owned and LM or its prime contractor lease and directly pay the water utility bill

The scope of LM's water conservation plan excludes the following:

- Water use or management associated with groundwater and surface water monitoring and remediation

- Consumption of bottled water

- Surface water, including storm water management and protection, and groundwater quality (LM addresses these during the job planning process)

2.3.2.1 *Applicable Regulations and Guidance*

In addition to the requirements identified in Section 1.2, the following regulations and guidance are applicable to the WC plan.

- *Guidelines for Establishing Criteria for Excluding Buildings* (DOE 2006)

- *Establishing Baseline and Meeting Water Conservation Goals of Executive Order 13423* (DOE 2008)

- *Federal Agency Implementation of Water Efficiency and Management Provisions of EO 13514* (CEQ 2013)

- *"Best Management Practices for Water Efficiency"* (DOE 2014a)

- *Federal Building Metering Guidance* (DOE 2014b)

- 42 USC 8253(f), "Use of Energy and Water Efficiency Measures in Federal Buildings"

2.3.2.2 *Key Terms*

Key terms used by the WC Team are identified and defined as follows:

alternative water: Types of alternative water include onsite gray water, harvested rainwater, process discharge water, and reclaimed wastewater.

energy conservation measure (ECM): Activities, practices, or projects that reduce the energy or water used by specific devices and systems, typically without adversely affecting the services provided. Such savings are generally achieved by substituting more technically advanced equipment or by improving operating procedures (e.g., operations and maintenance procedures) to produce the same level of end-use services (e.g., lighting, heating, variable frequency drives, low flow fixtures) with less energy or water input.

General site: This is a site (or portions of a site) where LM uses either potable or ILA water, but the site does not meet the Goal Metrics site-inclusion criteria.

Goal Metrics site: This is an LM site (or portions of a site) that meets the Goal Metrics site-inclusion criteria.

industrial, landscaping, agricultural (ILA) water: ILA water is all non-potable freshwater (surface and groundwater sources) used for ILA purposes plus potable water used in ILA

applications that is not already included in the 2007 potable water intensity baseline. Onsite alternative water used in ILA applications is not considered ILA water use.

non-WC site: This is a site where LM does not use potable or ILA water and, therefore, LM does not manage those water resources at all.

water intensity (WI): Potable water consumption measured in gallons per GSF of building space, including office space, industrial and laboratory facilities (provided that the building space uses water), and surrounding land, as applicable to Goal Metrics sites. Potable water used for landscape irrigation is reported in the total for water use, but the amount of water used on turf or landscape areas is not included in GSF reporting.

water use: Includes all potable water used for human consumption, building processes, the cooling of power plants or buildings, landscape, irrigation, or industrial purposes.

2.3.2.3   *Baseline Data*

Table 3 displays the data for the goals that have a baseline year.

Table 3. Water Conservation Metric Baseline Years and Values

Metric	Baseline Year	Baseline Value
Water intensity	2007	21.5 gallons per square foot of covered energy facilities
Industrial, Landscaping, Agricultural (ILA) Water	2010	0.5 thousand gallons

2.3.2.4   *Metrics*

The WC Team provides updates in the quarterly EPM report and performance status annually to the LM SSP and the DOE Sustainability Dashboard. The WC Team tracks overall performance against the metrics (goals, objectives, and targets) identified in Table 4.

Table 4. Water Conservation Plans

Regulatory Goals	LM Objectives	LM Targets
Goal 1: Reduce potable water intensity by a minimum of 2% annually through the end of 2025 (a minimum 36% reduction) relative to the 2007 potable water use baseline (EO 13693).	Objective 1: Achieve reduction in potable water intensity.	Target 1A-1: Calculate the WI for Goal Metrics sites for the fiscal year performance period, and determine LM's WI improvement or regression as a percentage change compared to the 2007 baseline.
		Target 1A-2: Track potable water consumption annually.
		Target 1A-3: Identify, promote, and implement potable water reuse strategies.

Table 4. Water Conservation Plans (continued)

Regulatory Goals	LM Objectives	LM Targets
Goal 2: Reduce ILA water use by a minimum of 2% annually through the end of 2025 (a minimum 30% reduction) relative to the 2010 ILA water use baseline (EO 13693).	Objective 2A: Save water by using reclaimed, recycled, and gray water for ILA applications.	Target 2A-1: Track ILA water usage.
		Target 2A-2: Identify, promote, and implement ILA water reuse strategies.
Goal 3: Install appropriate green infrastructure features on federally owned property to help with storm water and wastewater management (EO 13693).	Objective 3A: Utilize green infrastructure to help with storm water and wastewater management where cost-effective and appropriate.	Target 3A-1: Compile green infrastructure project information from Environmental Compliance points of contact to include in annual reporting.
Goal 4: Installing water meters and collect and utilize building and facility water balance data to improve water conservation and management (EO 13693).	Objective 4A: Meter all individual buildings for water, where cost-effective and appropriate (DOE 2014b).	Target 4A-1: Improve water conservation and management by installing water meters where cost-effective and appropriate.
		Target 4A-2: Collect and utilize building and facility water balance data where appropriate to assess water conservation and management performance.
Goal 5: Perform water evaluations annually to ensure each facility is evaluated at least once every 4 years (EISA 432).	Objective 5A: Schedule and perform water evaluations so that each covered facility is evaluated every 4 years.	Target 5A-1: Annually perform scheduled evaluations.

2.3.3   Process Description

In order to improve water efficiency, reduce potable WI and ILA water use and monitor progress toward water conservation goals, the WC Team utilizes several processes. The WC processes are broken down into the following categories:

- Site categorizations

- Metering evaluations

- Water management

- Efficiency implementations and tracking

2.3.3.1   Site Categorization

The WC Team evaluates all LM sites to determine which meet the aforementioned inclusion criteria, to obtain baseline water use data (if applicable), and to determine each site's category (non-WC, general, or Goal Metrics site).

The WC Team maintains the list of the categories for each site and reviews the categories case-by-case, if conditions at a site warrant it. The WC Team determines the categories for a newly transitioning LM site during or immediately after it becomes an LM site.

There are currently six LM Goal Metrics sites:

1. Fernald Preserve, Ohio, Site

2. Rifle, Colorado, Old Processing Site (the "Old Rifle site" herein)

3. Grand Junction, Colorado, Disposal Site

4. Monticello, Utah, Disposal and Processing Sites

5. Tuba City, Arizona, Disposal Site

6. Weldon Spring, Missouri, Site

The WC Team screens the water systems at Goal Metrics sites to identify metering needs, develop the metrics baselines, and prioritize future WC audits and efficiency improvement initiatives. Other details are collected, including: site contacts; current water use operations, activities, and practices; metering locations; building size (as applicable) in GSF; maps; and information on water utility payment processes and contracts.

2.3.3.2 Metering

With the exception of the Old Rifle site, LM uses standard water use meters at all Goal Metrics sites to measure potable water volumes. The WC Team determined LM should not use a meter at the Old Rifle site because LM uses delivered, potable water at the site and tracks its use with the delivery receipts; additionally the site is used only intermittently by LM staff and non-LM researchers, resulting in very little water use.

Table 5 provides threshold quantities for metering requirements:

Table 5. Water Metering Exclusions

Federal Building	Threshold
Large water using process	Consumption < 1000 gallons per day
Irrigated landscape area	< 25,000 square feet
All building functions	Consumption < 1000 gallons per day

LM does not meter its water use at sites that do not meet Goal Metrics sites criteria.

Installation and use of water meters for ILA water is not cost-effective. ILA water is tracked using various cost-effective methods such as using filled tanks of known volumes, or by using delivered water of known quantities.

2.3.3.3   EISA Evaluations

The WC Team evaluates all Goal Metrics sites once every 4 years in accordance with EISA 432. The WC Team:

- Develops and maintains a schedule to ensure all Goal Metrics sites are evaluated within the 4-year EISA reporting cycle

- Determines the type of evaluation to be performed based on a site's water usage and the costs and travel involved for an evaluation (desk, onsite, or Level I audit)

- Performs the evaluation following guidance established in EISA 432, (42 USC 8253(f))

- Prepares report documenting the results of the evaluation

The WC team utilizes the following best management practices when performing evaluations:

- Combines the evaluation with CAS, GP assessments, or energy evaluations.

- Arranges for site personnel to perform the evaluation where possible.

- Maintains a schedule of evaluations on the EMS SharePoint site.

- Contacts LMS site or facility leads to schedule evaluations.

- Provides results of evaluation to LMS site or facility leads to share with LM site or office managers.

2.3.3.4   Water Management Plans

The WC Team may create water management plans at Goal Metrics sites based on initial water evaluations and WC audits. When developing management plans, the WC Team considers site operations, maintenance, and processes as well as available technological advancements in water delivery systems, equipment, and fixtures. Water management plans should contain various site-specific strategies that include the "Best Management Practices for Water Efficiency" (DOE 2014a).

The WC Team works with the Environmental Compliance group (EC) points of contact (POCs) to ensure that sites use green infrastructure to help with storm water and wastewater management, where applicable. The WC Team compiles green infrastructure project information from EC POCs for annual reports.

2.3.3.5   Efficiency Implementation and Tracking

The WC Team:

- Works with site personnel to prioritize water saving initiatives based on their projected performance, efficiency, and return on investment. Funding for initiatives may come from site budgets, project budgets, WC budgets, building maintenance funds, and the like.

- Tracks and updates the status of water-saving initiatives annually in the DOE Sustainability Dashboard.

- Tracks and reports LM's water use with existing systems and procedures and notes LM's water savings after implementing new water conservation improvements or procedures.

- Promotes the following best management practices at general and Goal Metrics sites:

    — Use of water-efficient equipment and practices during project planning and implementation.

    — Purchase of water-efficient products and services that employ sustainable environmental practices. These include WaterSense products and WaterSense-label certified irrigation contractors (EPA 2014b).

    — Communicates LM's water-efficiency goals to LM employees to motivate them to use water more efficiently at work and at home. If LM constructs new buildings or renovates existing buildings (federally owned, LM-administered), the new construction or renovation must follow the LM Sustainable Buildings (SB) Team water use efficiency criteria in Section 2.6. This criteria includes landscaping.

    — Rewarding teams or individuals for particularly innovative, or outstanding water conservation ideas, or performance.

    — Networking with other DOE programs, federal agencies, and private entities about water conservation, exchanging ideas and information, and sharing resources to improve LM's water efficiency.

    — Including sustainable practices related to water conservation in the new leases to the greatest extent practicable, or when renewing or renegotiating existing leases.

Potable WI Tracking

LM established its potable WI metrics baseline using FY 2007 cumulative total potable water use and cumulative building-size data from all Goal Metrics sites. Specifically, the baseline is the cumulative total gallons (Tgal) of potable water LM used per building GSF during FY 2007. The WC Team calculated LM's baseline potable WI by dividing the cumulative FY annual potable water use total from all Goal Metrics sites by the cumulative total building GSF from all Goal Metrics sites. However, since the 2007 baseline was established, further guidance has been issued that requires the square footage associated with energy use be used to determine the WI calculation. WI is reported in annual reports as the energy used per square foot, and it is also tracked, as a best management practice, using the square footage associated with water use at applicable Goal Metrics sites (see Equation 12).

$$B_{(GMS)} = WI_{(B)} = \frac{Tgal_{(GMS\,07)}}{GSF_{(GMS\,07)}}$$
(Eqn. 12)

where

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

$WI_{(B)}$ = total potable WI (baseline)

$Tgal_{(GMS\,07)}$ = total gallons of potable water used at Goal Metrics sites in 2007

$GSF_{(GMS\,07)}$ = cumulative GSF for buildings on Goal Metrics sites in 2007

The WC Team calculated the baselines for three Goal Metrics sites using metered data; it calculated baselines for two Goal Metrics sites using water utility company data and calculated the baseline for one Goal Metrics site using estimates. For the latter, the WC Team documented its assumptions and estimating techniques to ensure consistency and enable future reference.

The WC Team tracks the gallons of potable water used by LM, the sources of the water, periods of use, sources of data, and building GSF changes, as well as baselines, on a Microsoft Excel spreadsheet. Table 6 is an example of potable water data tracking at a Goal Metrics site.

Note *The WC Team maintains water use data on the EMS Sustainability SharePoint site with limited access for control purposes.*

Table 6. Example Table for Tracking Potable Water Use by Site

LM Goal Metrics Site Name:						
			Start Date (mm/dd/yy)[b]	**End Date (mm/dd/yy)[b]**		
Location 1[a]:						
Location 2[a]:						
Total Potable Water Use at Site in Fiscal Year from All Locations: Gallons						

Notes:
[a] List all separate source locations for each Goal Metrics site (e.g., all meters or utility bills). Insert additional rows as needed.
[b] (mm/dd/yy) = month/day/year.

If LM adds or removes a large structure, a facility where LM uses water or adds or removes a Goal Metrics site, the WC team will calculate subsequent annual water use reflecting the change for the affected year.

To better evaluate individual sites, the WC Team can also calculate each site's WI.

The WC Team calculates LM's potable WI annually (for the fiscal year) and cumulatively, from 2008 through the 2025 performance period. The WC Team calculates LM's Goal Metrics sites' WI for a given performance period, and determines WI improvement or regression as a percentage change compared to the 2007 baseline (see Equation 13).

$$\Delta\% = \frac{WI_{(B)} - WI_{(P)}}{WI_{(B)}} \times 100 \qquad \text{(Eqn. 13)}$$

where

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

If the calculation above generates a positive value, it indicates that LM reduced (improved) potable WI. Conversely, a negative value would indicate LM increased its WI.

ILA (non-potable) Water Use Tracking

The WC Team tracks ILA water use data in various cost-effective ways such as using filled tanks of known volumes or by using delivered water of known quantities. This data includes the non-potable water (in gallons) LM used cumulatively at all the Goal Metrics sites for ILA applications. FY 2010 was the baseline period for this metric. Unlike the potable water use calculation, ILA use does not represent intensity, so LM does not use building GSF to calculate its ILA use (see Equation 14).

$$\Delta\% = \frac{ILA_{(B)} - ILA_{(P)}}{ILA_{(B)}} \times 100 \qquad \text{(Eqn. 14)}$$

where

$\Delta\%$ = change in percentage (for performance period)
$ILA_{(B)}$ = ILA gallons used (baseline)
$ILA_{(P)}$ = ILA gallons used (during a set performance period)

The WC Team:

- Compiles its annual ILA use data in a table similar to Table 3 which also contains LM's baseline ILA data.

- Evaluates its ILA water use reduction performance annually (using the fiscal year as the performance period) and cumulatively (2011 through 2025).

- Determines ILA water conservation performance by dividing the difference between the baseline total and the performance period total by the baseline total, multiplied by 100. If the resulting percentage change is a positive value, it indicates reduced ILA water use.

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Attachment 4

LM/LMS *Fleet Management Plan*

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Fleet Management Plan

U.S. DEPARTMENT OF ENERGY | Legacy Management

Contents

Table

Abbreviations

AFV	alternative fuel vehicle
APR	accountable property representative
CFR	*Code of Federal Regulations*
DOE	U.S. Department of Energy
E85	85% ethanol fuel blend
EMS	Environmental Management System
EO	Executive Order
EPAct	Energy Policy Act
GSA	U.S. General Services Administration
LM	Office of Legacy Management
LMS	Legacy Management Support

1.0   Fleet Management

1.1 Introduction and Overview

This *Fleet Management Plan*, in conjunction with the *Environmental Management System Teams Manual* (LMS/POL/S11374) and the *2019 LM Site Sustainability Plan* (LMS/S07225) (DOE forthcoming), outlines the U.S. Department of Energy (DOE) Office of Legacy Management (LM) fleet management strategies, and it details LM's planned activities for meeting sustainability goals defined in federal law, including Executive Order (EOs) such as EO 13693 (revoked May 17, 2018, by EO 13834), *Planning for Federal Sustainability in the Next Decade*; presidential memoranda; DOE guidance documents such as the *2016 Strategic Sustainability Performance Plan, Report to The White House Council on Environmental Quality and Office of Management and Budget* (DOE 2016), and DOE Order 436.1, *Departmental Sustainability*. These regulatory documents help LM perform appropriate fleet management that is consistent with DOE and federal government laws and policies.

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

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

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

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

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

Table 1. LM Fleet Locations and Number of Vehicles

Fleet Garaging Location	Number of Vehicles*
Fernald Preserve, Ohio, Site	10 1 owned[b]
LM office at Grand Junction, Colorado	24
Monticello, Utah, Disposal and Processing Sites	1[a]
LM Business Center at Morgantown, West Virginia	1[a]
LM office in Pinellas County, Florida	1[a]
Tuba City, Arizona, Disposal Site	1[a]
Weldon Spring, Missouri, Site	1[a]
LM office at Westminster, Colorado	10
LM office at Window Rock, Arizona	1[a]
Total	51

Notes:
All LM vehicles are considered pooled.
* This data count is accurate as of September 30, 2018.
[a] At all occupied sites with only one assigned vehicle, the vehicle is needed to support the mission tasks of that site on a daily basis. Due to LM project and mission needs, pooled vehicles from the LM office at Grand Junction are not viable resources for remote sites.
[b] All vehicle counts are for leased vehicles only, unless specifically stated otherwise.

2.0   Vehicle Acquisition

2.1 Choosing a Vehicle

Vehicle replacements are chosen based on GSA guidelines on a like-for-like basis or as mission changes dictate. LM plans for 75% of all new and replacement light-duty acquisitions to be alternative fuel vehicles (AFVs) in accordance with EO 13693, which was revoked by EO 13834 on May 17, 2018, and when there is alternative fueling infrastructure located within a 5-mile radius or 15-minutes' travel time. When LM leases new GSA vehicles, a list of minimum mission-related requirements for the requested vehicle is provided to GSA. GSA obtains a vehicle that matches LM's minimum requirements; if GSA is unable to accommodate such a request, LM may use commercial leasing as an option.

LM policy requires inspections of each vehicle using an internal inspection form and pictures to document damage and the vehicle's condition upon receipt and termination of the lease. ("Receipt" is when LM takes physical possession of the vehicle asset from the transport driver, and "termination" is when LM surrenders physical possession of the vehicle asset to the transport driver.) The inspection form is signed by the person inspecting the vehicle and by the transport driver and provided to GSA or the commercial vendor as requested. Pictures should be used to document the vehicle's condition, and the documentation package should be provided to GSA or the commercial leasing facility and maintained for the duration of the leased vehicle's life in the LM fleet.

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

- When a rental vehicle or equipment (i.e., construction or other non-fleet vehicle) is needed for fewer than 120 days and when it is not traveling more than 50 miles from the garaging location, LM can use the GSA Short Term Rentals program.

- When GSA has older returned vehicles available, LM can request these vehicles for temporary seasonal use. Seasonal-use vehicles are allowed for LM's supplemental use. If used less than 120 continuous days, the vehicle is considered a rental vehicle. If the vehicle is used for 120 continuous days or more, the vehicle is considered a leased vehicle and is now FAST reportable for that fiscal year's usage. If the 120-day time spans crosses September 30 of that year, the 120-day clock starts over on September 30.

- In accordance with LM policy, LM may hold over any scheduled replacement vehicle for no more than one additional year due to the added cost of maintaining aging vehicles. This request is dependent on GSA approval.

- As a last resort and when leased vehicles are unavailable through GSA, LM should consider a commercial rental or leased vehicle for seasonal usage. The requesting party shall provide a justification to include the reason for the need, the approximate miles expected to be driven, a cost benefit analysis showing the cost of the vehicle versus pooling and why pooling or using a pooled vehicle is not an option. It is imperative that inspections are conducted and documentation, including pictures of the vehicle condition, is maintained for the life of the rental or lease.

As stewards of government appropriations and in accordance with the Section 701 waiver process from the Energy Policy Act (EPAct) of 2005 (PL 109-58), LM will make every effort to avoid the excessive costs of purchasing AFVs when there is no alternative fueling infrastructure within a reasonable distance of the garaging location. LM has a policy to acquire low greenhouse gas–emitting vehicles primarily when they are available; if they are unavailable, LM acquires E85 (85% ethanol fuel blend)–capable AFVs. Low greenhouse gas–emitting vehicles operated with conventional gasoline fuel are considered AFVs. Alternative-fuel vehicles are not purchased or leased by LM if there is no infrastructure located within a 5-mile radius or 15-minutes' travel time from the garaging location. In January 2018, Pester Marketing bought out Western Convenience Stores and discontinued the sale of E85 fuel at the stations that once provided this fuel to Grand Junction and other LM sites.

2.2   Approvals for Leased Vehicles

Approval by the LM Organizational Property Management Officer (OPMO) and the DOE Headquarters fleet manager is required when leasing vehicles through GSA. When adding specialized accessory equipment to the leased vehicles, approval is required of the LM OPMO and the GSA fleet service representative.

2.3   Accessory Equipment

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

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

GSA calculates the added fixed costs for accessories by counting the replacement months for the lease and amortizing that cost over the anticipated lifecycle of the vehicle depending on its size class. In the case of light-duty vehicles, its replacement criteria is 7 years or 65,000 miles, so GSA would amortize the cost of the accessories over 7 years. Accessories typically increase the resale value of the vehicle for GSA, reducing billbacks to LM for vehicles which otherwise would not meet the fair market price. LM has the option to return any and all accessories to GSA. Any accessories that cannot be sold will be removed, and the cost of the removal will be billed back to LM.

To determine whether GSA or DOE will own the accessories, LM will consider the anticipated level of effort for disposal, the ability to reuse the accessory on another vehicle, and the nature of the vehicle use. For instance, if LM knows it will be required to dispose of the asset at the end of the life cycle (often due to LM's inability to reuse the accessory or because the project on which it is needed is a temporary project), then LM would request the equipment be GSA-owned (e.g., camper toppers, suspension components, and engine modifications due to specific requirements of year, make, and model). However, if an accessory can be reused on other vehicles and is not specific to a certain year, make, and model, LM would request to own the equipment (e.g., winches and backup cameras). Finally, if a vehicle routinely accumulates many miles each year and is replaced before the standard 7 years for light-duty vehicles, LM can realize a cost savings through using GSA-owned accessories, as LM will not pay full retail price for the accessories. For low-mileage vehicles with accessories owned by GSA, LM will pay the full price of the accessories over the life cycle of the lease. The cost savings is realized in the level of effort required for the Personal Property team to excess the equipment. In the scenario where LM holds the vehicle longer than 7 years, and if GSA allows, then there may be an increased cost to LM due to an additional fixed rate that is added to the lease rate for accessories owned and capitalized to the vehicle.

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

3.0   Fuel Infrastructure

3.1   Impact on Acquisition Strategy

Fueling infrastructure does currently impact the LM vehicle acquisition strategy. Vehicles that are compatible with E85 flex fuel or are low greenhouse gas–emitters are obtained whenever possible for all light-duty use in accordance with EO 13693, which was revoked on May 17, 2018, by EO 13834. 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 sites, or when the mission does not allow it. Other alternative fuels, such as biodiesel, liquid propane gas, compressed natural gas, and electricity, are not feasible due to a lack of infrastructure near sites that LM manages. LM continues to struggle with obtaining E85 fuel at commercial fueling stations due to Pester Management's buyout of Western Convenience Stores in January of 2018.

4.0   Vehicle Use and Policies

4.1   Education

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

4.2   Check Out Process

The Grand Junction office procedures for pooled fleet vehicle use require personnel to schedule use of a GSA vehicle with the dispatcher at least 2 days in advance unless there is an emergency situation that does not allow advanced scheduling. All fleet vehicles are allocated on a first-come, first-served basis with the exception of mission-critical needs, which supersede all other requests. For pooled vehicle reservations at the other LM offices, personnel must contact the onsite LMS fleet APR for availability.

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

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

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

4.3   Pooled and Assigned Vehicle Fleets

LM's policy on vehicle assignments is to pool fleet vehicles when possible. Pooled fleets include vehicles that are not permanently assigned to teams or individuals but are available on an as-needed basis to authorized drivers performing LM work. The fleet at the LM office in Grand Junction is an example of a pooled fleet. At this location, drivers are required to reserve their vehicles in advance, load equipment into the vehicles before departing, and remove all equipment and trash when returning the vehicle. Pooled fleets often provide the greatest utilization of vehicles. No LM vehicles are assigned to individuals. Pooling vehicles within a team of two or more individuals has proven to be an effective and efficient means to accomplish the LM mission with the least effort to the teams. Only the LM or LMS fleet managers can pool a vehicle to a team on a permanent basis.

Occasionally, vehicles assignments may be made to vehicles to make them assigned or to pool them as inefficiencies occur or when the mission requires. This policy is driven by mission needs determined by LM. At no time is the convenience or comfort of the driver used to determine the need to change pooling scenarios or assignments.

4.4   Anti-Idling Policy

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

warm while conducting fieldwork in extremely cold weather or when the cab of a vehicle must be kept cool while conducting work in hot weather.

4.5   Home-to-Work Use

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

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

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

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

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

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

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

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

5.0   Additional Policies and Activities

Additional fuel reduction, alternative fuel use, and vehicle reduction activities and policies are driven by changes in DOE goals and strategies. The LM Fleet Management team uses a continual evaluation methodology (e.g., telematics, asset management system, and GSA tools) to achieve the LM mission, identify fueling infrastructure for alternative fuels in the areas where

LM operates, analyze the cost of current vehicle usage, identify more feasible means for improving vehicle usage, and right-size the number of unnecessary or oversized fleet vehicles. This methodology provides good stewardship of government assets while maintaining the highest level of public safety and health throughout LM.

LM can reduce petroleum usage and increase alternative fuel usage by encouraging carpooling to conferences or onsite trips, educating drivers about the proper use of 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 Fleet Management team regularly monitors DOE's Office of Energy Efficiency and Renewable Energy website for updated information on the alternative fueling infrastructure available at all LM sites. Additionally, LM could realize increased savings by encouraging the use of electric golf carts, utility terrain vehicles, or other non-fleet electric vehicles when environmental factors and mission tasks allow.

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

Alternative fuel use is required for federal fleets that contain vehicles capable of operating on alternative fuels. LM's policy is to fuel with alternative fuels whenever it is possible without any unreasonable effort. This effort positively contributes toward accomplishing overall agency sustainability goals. 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 fuel during non-rush hour times. Drivers should make the determination based on feasibility, safety, and cost impact to the project.

6.0   References

41 CFR 102-34, "Motor Vehicle Management," *Code of Federal Regulations*.

41 CFR 109, U.S. Department of Energy, "Department of Energy Property Management Regulations," *Code of Federal Regulations*.

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

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

DOE (U.S. Department of Energy), 2017. *Site Management Guide*, Update 19, March 2017.

DOE (U.S. Department of Energy), forthcoming. 2019 *LM Site Sustainability Plan,* LMS/S07225, Office of Legacy Management, to be published.

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

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

EO (Executive Order) 13834, *Efficient Federal Operations,* May 17, 2018.

PL 109-58, "Energy Policy Act of 2005," Public Law.

Attachment 5

2017 LM/LMS Commuter Survey

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2017 LM/LMS Commuter Survey

1. Please select your main work location:

○ Fernald/Mound, Ohio

○ Grand Junction, Colorado

○ Monticello, Utah

○ Morgantown, West Virginia

○ Pinellas, Florida

○ Tuba City, Arizona

○ Weldon Spring, Missouri

○ Westminster, Colorado

Other (please specify)

[   ]

No logic applied, all responses proceed to question number 2

2. What is your employment status?

○ Federal government employee

○ Federal government contractor (e.g., Navarro, Leidos, Weston, LMATA employee)

○ Other (please specify)

[   ]

No logic applied, all responses proceed to question number 3

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

○ 9/80 work week (9-hour work days and 1 day off each pay period)

○ 4/10 work week (4 10-hour work days and 1 day off each week)

○ Working part-time

○ Working 5 8-hour days a week

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

Other (please specify)

[   ]

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

○ 5

○ 4

○ 3

○ 2

○ 1

○ Other (please specify)

[ ]

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

5. Do you participate in teleworking?

○ Yes, I telework full-time

○ Yes, I regularly telework once a week

○ Yes, I regularly telework once a pay period

○ Only in inclement weather

○ No, I do not participate in teleworking

○ Other (please specify)

[ ]

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

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

[ ]

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

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

○ Car (drove alone)

○ Truck/Van/SUV

○ Motorcycle

○ Carpool/Vanpool

○ Bicycle

○ Walk

○ Transit Bus

○ Transit Rail (subway, light rail)

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

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

○ Gas

○ Hybrid

○ Diesel

○ Electric

No logic applied, all responses proceed to question number 9

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

[   ]

No logic applied, all responses proceed to question number 10

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

○ Yes, **in place of** the primary form (e.g., occasionally biking instead of driving)

○ Yes, **in addition to** the primary form (e.g., driving a car to the bus stop)

○ No

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

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

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

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

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

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

○ Car (drove alone)

○ Truck/Van/SUV

○ Motorcycle

○ Carpool/Vanpool

○ Bicycle

○ Walk

○ Transit Bus

○ Transit Rail (subway, light rail)

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

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

○ Gas

○ Hybrid

○ Diesel

○ Electric

No logic applied, all responses proceed to question number 15

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

○ Yes

○ No

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

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

◯ Car (drove alone)

◯ Truck/Van/SUV

◯ Motorcycle

◯ Carpool/Vanpool

◯ Bicycle

◯ Walk

◯ Transit Bus

◯ Transit Rail (subway, light rail)

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

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

◯ Gas

◯ Hybrid

◯ Diesel

◯ Electric

No logic applied, all responses proceed to question number 18

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

No logic applied, all responses proceed to question number 19

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

End of survey