LMS/S07225

Site Sustainability Plan

U.S. Department of Energy
Office of Legacy Management

December 2014

U.S. DEPARTMENT OF ENERGY | Legacy Management

This page intentionally left blank

LMS/S07225

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

December 2014

David W. Geiser

Digitally signed by David W. Geiser
DN: c=us, o=u.s. government, ou=department of energy, ou=Energy IT Services, ou=DOE Common Operating Environment, ou=People, cn=David W. Geiser
Date: 2014.12.08 16:36:59 -05'00'

David W. Geiser, Director, Office of Legacy Management **Date**

This page intentionally left blank

Contents

Abbreviations iii
I. Executive Summary 1
II. Performance Review and Plan Narrative 9
1 GHG Reduction and Comprehensive GHG Inventory 9
1.1 Scope 1 and 2 GHG Emission Reduction 9
1.2 Scope 3 GHG Emissions Reductions 12
2 Buildings, Energy Savings Performance Contract (ESPC) Initiative Schedule, and Regional and Local Planning 19
2.1 Energy Intensity Reduction 19
2.2 EISA Section 432 Energy and Water Evaluations 25
2.3 Metering 27
2.4 Cool Roofs 29
2.5 Existing High-Performance and Sustainable Building (HPSB) Buildings 31
2.6 High-Performance Sustainable Design 34
2.7 Regional and Local Planning 36
3 Fleet Management 42
3.1 Increase Alternative Fuel Use by 10 Percent Year-Over-Year 42
3.2 Reduce Departmental Fleet Petroleum Use by 2 Percent Annually 43
3.3 AFV Purchases 46
4 Water Use Efficiency and Management 48
4.1 Potable Water Intensity Reduction Goal 48
4.2 Non-Potable Fresh Water ILA Use Reduction Goal 52
4.3 Storm Water Management 53
5 Pollution Prevention and Waste Minimization 55
6 Sustainable Acquisition 60
6.1 Procurements Meet Requirements by Including Necessary Provisions and Clauses (Sustainable Procurements/Biobased Procurements) 60
7 Electronics Stewardship and Data Centers 63
7.1 Data Centers 63
7.2 Power Utilization Effectiveness 66
7.3 Power Management 67
7.4 Electronics Stewardship 69
8 Renewable Energy 71
8.1 Renewable Energy 71
9 Climate Change Resilience 74
10 Energy Performance Contracts 75
10.1 Energy Performance Contracts 75
11 Budget and Funding 75
11.1 Overall Status 75
11.2 Site-Specific Measurable Goals and (3–5) Milestones 76
11.3 Success Stories, Accomplishments, Lessons Learned, and Best Management Practices 76
12 LM's Standard EMS Operations 77
12.1 EMS Organization 77
12.2 Sustainability Regulatory Reporting Adherence 79
III. Fleet Management Plan 81

Figures

Figure 1. Percent Change in Energy Use Intensity 20
Figure 2. Fernald Site Groundwater Pumping Efficiency 21
Figure 3. Annual LM Electrical Usage 22

Tables

Table 1. DOE Goal Summary Table 3
Table 2. LM Energy Intensity Use (Btu/GSF per Year) 19
Table 3. Metered Fernald Well Electrical Use 21
Table 4. LM Petroleum Fuel Use 44
Table 5. LM Combined-Sites Water Use Since 2007 49
Table 6. Water Use Intensity Comparison Using Square Footage Associated with Water and Energy Use 49
Table 7. 2014 EPEAT Purchases 61

Attachments

Attachment A Environment, Safety, and Health Policy
Attachment B FIMS Excluded Building List and Certification Letter
Attachment C LM Fleet Management Plan
Attachment D Climate Change Resilience
Attachment E Climate Change Screening Level Vulnerability Assessment Survey
Attachment F Reporting Inconsistencies Between LM Data and Provided Data

Abbreviations

AFV	alternative fuel vehicle
APIA	Aleutian Pribilof Islands Association Inc.
Btu	British thermal units
CAS	Condition Assessment Survey
CEDR	Consolidated Energy Data Report
CO_2	carbon dioxide
CY	calendar year
D&D	deactivation and decommissioning; decontamination and decommissioning
DOE	U.S. Department of Energy
E85	Fuel blend 85% Ethanol
ECM	energy and water conserving measures
EISA	Energy Independence and Security Act
EMIT	Enterprise Management and Information Technology
EMS	Environmental Management System
EO	Executive Order
EPAct	Energy Policy Act
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
EPEAT	Electronic Product Environmental Assessment Tool
ESL	Environmental Sciences Laboratory
ESPC	Energy Savings Performance Contract
EUI	energy use intensity
FAST	Federal Automotive Statistical Tool
FDCCI	Federal Data Center Consolidation Initiative
FEMP	Federal Energy Management Program
FIMS	Facilities Information Management System
FY	fiscal year
GHG	greenhouse gas
GP	Guiding Principle
GSA	U.S. General Services Administration
GSF	gross square feet; gross square footage
HPSB	high-performance and sustainable building
HRPP	high-risk personal property

HVAC	heating, ventilation, and air-conditioning
IAEA	International Atomic Energy Agency
ILA	industrial, landscaping, and agricultural
IPM	integrated pest management
kW	kilowatts
LEED	Leadership in Energy and Environmental Design
LM	Office of Legacy Management
LMBC	Legacy Management Business Center
LMS	Legacy Management Support
NC	New Construction
NECPA	National Energy Conservation Policy Act
OMB	U.S. Office of Management and Budget
PL	Public Law
PPOA	pollution prevention opportunity assessment
PREP	Preliminary Real Estate Plan
PUE	power utilization effectiveness
PV	photovoltaic
RE	renewable energy
REC	Renewable Energy Certificate
RSLS	Regulatory Supervision of Legacy Sites
SF_6	sulfur hexafluoride
SOARS	System Operation and Analysis at Remote Sites
SPO	Sustainability Performance Office
SSP	Site Sustainability Plan
SSPP	Strategic Sustainability Performance Plan
T&D	transmission and distribution
USC	*United States Code*
WMP2	Waste Minimization and Pollution Prevention
WUI	water use intensity

I. Executive Summary

a. Site Management Vision

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) embodies environmental stewardship excellence while performing its primary mission managing DOE post-closure legacy sites and protecting human health and the environment. LM monitors, tests, inspects, and maintains more than 65,000 acres at 89 sites in 28 states and Puerto Rico. In December 2014, 39 sites required only records management and public outreach. LM's goals are protecting human health and the environment; preserving, protecting, and sharing records and information; meeting commitments to the contractor workforce; optimizing land and asset use; and sustaining management excellence.

LM incorporates the Environmental Management System (EMS) life-cycle continuum in the LM mission. LM jointly operates its EMS program with its prime contractor for the Legacy Management Support (LMS) contract, and both partners prioritize resource sustainability while executing the LM mission.

Note 1 *In this document, a reference to "LM" represents both LM and LMS (for data, personnel, etc.) unless specifically noted otherwise.*

Note 2 *Unless stated otherwise, all data are reported in fiscal years).*

b. Major Planning Assumptions and Issues, Including Funding Strategies

This *Site Sustainability Plan* (SSP) outlines LM's sustainability and management strategies and details LM's progress in meeting the EMS goals defined in federal law, Executive Orders, Presidential Memorandums, and DOE departmental guidance documents.

LM achieves these goals by conserving resources (consuming fewer resources, reusing/recycling resources, and promoting resource conservation at home and work); implementing infrastructure improvements; and operating onsite renewable-power-generating projects. LM's priorities are to reduce electricity usage, greenhouse gas emissions, fleet vehicle inventory, and petroleum use. LM scientists and engineers help the LM EMS staff meet overall EMS goals and the goals described above.

LM funds long-term sustainability projects in its site-specific budgets. The EMS staff identifies project costs in the Sustainability Crosscut budget and other related budget calls.

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

In 2014, LM passed its annual internal EMS audit and continued to put forth its EMS as a good model of a joint federal/contractor effort. However, LM is a small DOE organization, and so it represents only a small percentage of DOE's overall sustainability goals.

Also in 2014, LM achieved or exceeded goals involving greenhouse gas (GHG) Scope 1, 2, and 3 emissions; existing buildings meeting Guiding Principles; alternative fuel consumption; petroleum fuel reduction; fleet reduction; alternative fuel vehicle (AFV) purchasing requirements; potable water intensity reduction; industrial, landscaping, and agricultural (ILA) water consumption; construction debris and solid waste recycling; sustainable acquisition; and electronics stewardship and data centers. LM did not achieve its 2014 target goal for reducing energy use intensity (EUI) by 27 percent.

By 2020 LM is projected to assume responsibility for 40 additional legacy sites and will adjust its EMS accordingly. As LM receives sites, it will employ more workers, occupy more office space, operate more vehicles, consume more fuel, purchase more supplies, and generate more waste. In addition, buildings at future sites will affect EUI and water use intensity sustainability goals, as these metrics use either the number of buildings or the total square footage in calculations. Sites' conditions at transfer could vary greatly, making it difficult to predict their impact to LM sustainability goals. As LM receives sites it will monitor the new impacts to sustainability goals and related funding. LM might request additional EMS funding and a waiver for achieving certain sustainability goals.

Behavioral change is challenging, but it is essential for successful sustainability programs. Unlike physical facility or technology upgrades, behavioral changes are often low- or no-cost voluntary actions. Often, the most difficult step in behavioral change is realizing change is needed. Employees must acknowledge that even though they do not personally receive any savings, or are not penalized for nonparticipation, their actions help LM achieve its sustainability goals. LM will continually train, support, and engage employees, thus sustaining their behavioral changes.

As identified in the "Site Management Vision" section above, LM has multiple sustainability goals. Underlying these goals are LM's core values involving social responsibility, economic prosperity, and environmental stewardship. For social responsibility, LM focuses on both staff and public communication and safety. For economic prosperity, LM promotes business excellence by being fiscally responsible and using best business practices. For environmental stewardship, LM consults with stakeholder communities regarding its compliance with environmental laws, regulations, and agreements; its support for environmental justice; and its general respect for the environment.

d. Summary Table of Goal Targets

LM's 2014 reporting consists of both the Consolidated Energy Data Report (CEDR) and this SSP. See Table 1 for a 2014 performance summary and a long-term performance projection through 2020. See Attachment A for a copy of LM's Environment, Safety, and Health policy.

Table 1. DOE Goal Summary Table

SSPP Goal #	DOE Goal	Performance Status Through Fiscal Year (FY) 2014	Planned Actions & Contribution	Risk of Non-attainment
GOAL 1: Greenhouse Gas Reduction and Comprehensive Greenhouse Gas Inventory				
1.1	Reduce Scope 1 & 2 GHGs 28% by FY 2020 from a FY 2008 baseline. (2014 target: 19%)	LM estimates exceeding the 2014 target. LM reduced Scope 1 & 2 GHG emissions 48.7% from the 2008 baseline.	Continue to reduce GHG production.	Low
1.2	Reduce Scope 3 GHGs 13% by FY 2020 from a FY 2008 baseline. (2014 target: 5%)	LM estimates exceeding the 2014 interim target. LM reduced Scope 3 GHG emissions an estimated 30.8% from the 2008 baseline. 2013 data placeholders were used for the estimated reduction. Final performance is pending federal employee business travel data.	Scope 3 GHG calculations fluctuate with baseline changes or emission calculations. LM will maintain goal status, and will strive to further reduce GHG emissions.	Low
GOAL 2: Buildings, Energy Savings Performance Contract (ESPC) Initiative Schedule, and Regional and Local Planning				
2.1	30% energy intensity (British thermal units per gross square foot) reduction by FY 2015 from a FY 2003 baseline. (2014 target: 27%)	LM has not met the 2014 interim DOE target. LM had a 3.1 percent decrease in EUI between 2003 and 2014.	Once the Fernald, Ohio, Site well meters have been in place for an entire year and the exclusion applied, LM will likely meet the 2015 EUI reduction goal.	Low
2.2	EISA Section 432 energy and water evaluations.	LM audited water use at the Grand Junction Disposal and Rifle sites in 2014. LM audited its energy use at the Tuba City, Arizona, Disposal Site; Monument Valley, Arizona, Processing Site; Monticello, Utah, Disposal Site; and Shiprock, New Mexico, Disposal Site in 2014.	LM rotates site audits to ensure it audits 100% of the sites every 4 years in accordance with EISA Section 432.	Low
2.3	Individual-building metering for 90% of electricity (by October 1, 2012); for 90% of steam, natural gas, and chilled water (by October 1, 2015). (2014 target: 90% and 75%, respectively)	LM exceeded the 2014 interim target for natural gas. 100% are individually metered for natural gas. LM does not have steam or chilled water. 65% of LM's electrical use was individually metered for electricity.	LM will have individually metered 98% of its electrical use by 2015.	Low
2.4	Cool roofs, unless uneconomical, for roof replacements unless project already has CD-2 approval. New roofs must have thermal resistance of at least R-30.	LM did not replace any roofs in 2014.	LM does not plan to replace any roofs in 2015.	Low

Table 1 (continued). DOE Goal Summary Table

SSPP Goal #	DOE Goal	Performance Status Through Fiscal Year (FY) 2014	Planned Actions & Contribution	Risk of Non-attainment
2.5	15% of existing buildings greater than 5,000 gross square feet (GSF) are compliant with the GPs of HPSBs by FY 2015. (2014 target: 13%)	LM exceeded the interim target in 2014. Two, additional leased buildings met the HPSB GPs; LM exceeded the 15% 2015 goal and the 13% 2014 interim target. 71% of LM leases comply with the Guiding Principles.	Where possible, LM will continue meeting all the GPs in the remaining buildings greater than 5,000 GSF.	Low
2.6	All new construction, major renovations, and alterations of buildings greater than 5,000 GSF must comply with the GPs.	LM did not have any new construction, major renovations, and/or alterations in 2014.	LM does not plan any new construction, major renovations, or alterations in 2015.	Low
2.7	Efforts to increase regional and local planning coordination and involvement.	LM disposed of 5 federal parcels of land; installed a 280-foot-long boardwalk as part of a publicly accessible trail; reintroduced federally endangered species of insects, increased vegetation diversity, and supported re-vegetation at various LM sites; maintained educational outreach activities at local colleges; assisted in developing the final version of an International Atomic Energy Agency technical document and an outline for a training class for reclaiming abandoned uranium mines.	LM plans to dispose of two more properties in FY 2015 and FY 2016. LM will continue to support land and building asset reuse; Transportation/Facility/ Renewable Energy Planning opportunities; the Principles for Sustainable Federal Location Decision; Watershed and Ecosystem Management; and Environmental Management/ Stakeholder Involvement and Collaboration.	Low
GOAL 3: Fleet Management				
3.1	10% annual increase in fleet alternative fuel consumption by FY 2015 relative to an FY 2005 baseline. (2014 target: 136% cumulative since 2005)	LM exceeded the 2014 interim target. LM's alternative fuel consumption of E85 was increased by 361,747% in 2014 compared to the 2005 baseline. LM exceeded this goal.	When possible, LM will continue using E85 as its primary U.S. General Services Administration Fleet fuel.	Low
3.2	2% annual reduction in fleet petroleum consumption by FY 2020 relative to an FY 2005 baseline. (2014 target: 18% cumulative since 2005)	LM exceeded the 2014 interim target. The total fuel used for 2014 was 24,559 gallons, and for 2005 it was 31,488 gallons. This was a 22.0% reduction in total fuel consumption from 2005. LM calculated the conventional fuel reduction goal as 18.8% less conventional fuel use in 2014 compared to 2013.	When possible, LM will continue consolidating vehicle passengers, telecommuting, and teleconferencing in lieu of personal meetings.	Low

Table 1 (continued). DOE Goal Summary Table

SSPP Goal #	DOE Goal	Performance Status Through Fiscal Year (FY) 2014	Planned Actions & Contribution	Risk of Non-attainment
3.3	100% of light duty vehicle purchases must consist of AFVs by FY 2015 and thereafter; and 75% of all vehicles will be AFVs by FY 2015.	LM has met this goal. 96.2% of LM's light-duty fleet is AFVs. LM's current light-duty fleet comprises 26 vehicles.	LM will continue to replace light-duty conventional fuel vehicles with AFVs.	Low
"GOAL 4: Water Use Efficiency and Management				
4.1	Reduce potable water intensity 26% (gallons per gross square foot) by FY 2020 compared to a FY 2007 baseline. (2014 target: 14%)	LM exceeded the 2014 interim target. LM reduced potable water use intensity by 92.7% in 2014 compared to the 2007 baseline, thus exceeding the 2014 14% water intensity reduction interim goal. LM audited its water use at the Grand Junction Disposal and Rifle sites in FY 2014. Note: The percent reduction does not match CEDR Tab 1.2. See Table 6 and footnote "a" in Table 5 for more information.	LM will continue tracking use and will plan and implement water conservation measures. LM will continue assessing water use and identifying water reduction and reuse opportunities.	Low
4.2	Reduce ILA water use 20% by FY 2020 compared to a FY 2010 baseline. (2014 target: 8%)	LM exceeded the 2014 interim target. LM reduced ILA consumption by 8.9% in 2014, exceeding the 2014 8% reduction interim goal. Note: The percent reduction does not match CEDR Tab 1.2. See Table 6 and footnote "a" in Table 5 for more information.	LM will continue tracking use and will reduce ILA use through improved use practices and water-efficient products. LM will continue auditing and assessing its water use and will identify water reduction and reuse opportunities.	Low
GOAL 5: Pollution Prevention and Waste Reduction				
5.1	Divert at least 50% of nonhazardous solid waste, excluding construction and demolition debris, by FY 2015.	LM met the goal in 2014. LM diverted 60.3% of nonhazardous solid waste in 2014.	LM will implement the guidance that was recently developed for project managers on ways they can reduce or recycle nonhazardous solid waste. LM is considering updates to non-hazardous waste recycling stations to encourage increased participation.	Low
5.2	Divert at least 50% of construction and demolition materials and debris by FY 2015.	LM met the goal in 2014. LM diverted 82.3% of construction and demolition debris in 2014.	LM will implement the guidance recently developed for project managers on ways they can reduce or recycle construction and demolition debris in their projects.	Low

Table 1 (continued). DOE Goal Summary Table

SSPP Goal #	DOE Goal	Performance Status Through Fiscal Year (FY) 2014	Planned Actions & Contribution	Risk of Non-attainment
GOAL 6: Sustainable Acquisition				
6.1	Procurements meet requirements by including necessary provisions and clauses (Sustainable Procurements/Biobased Procurements).	LM met the goal. 100% of procurements contained sustainable acquisition provisions and clauses and met the requirements.	LM will continue to include sustainable acquisition wording in all solicitations and other documents where applicable, and will continue to require its subcontractors to purchase sustainable goods and services.	Moderate
GOAL 7: Electronics Stewardship and Data Centers				
7.1	All core data centers are metered to measure a monthly Power Usage Effectiveness (PUE) of 100% by FY 2015. (2014 target: 90%)	LM exceeded the 2014 interim target. 100% of LM data centers are separately metered.	As needed, LM will comply with Federal Data Center Consolidation Initiative PUE standards.	Low
7.2	Core data centers maximum annual weighted average PUE of 1.4 by FY 2015. (2014 target: 1.5)	LM exceeded the 2014 interim target. In 2014, the Legacy Management Business Center Data Center in Morgantown, West Virginia, and the Grand Junction, Colorado, Office Site Data Center both reported a PUE of 1.0, which is 60% better than the 2014 target PUE.	Will continue to monitor and make adjustments to meet the target PUE.	Low
7.3	Power management: 100% of eligible PCs, laptops, and monitors with power management actively implemented and in use by FY 2012.	LM met the FY 2012 (100%) implementation goal. In 2014, all LM distributed systems conformed to target power management settings.	Continue to activate power management on any new eligible PCs, laptops, and monitors.	Low
7.4	Electronics Stewardship – 95% of eligible electronics acquisitions meet EPEAT standards.	LM met the goal. 98% of LM's eligible electronics acquisitions met EPEAT standards in FY 2014.	Continue to prioritize the acquisition of EPEAT registered electronic equipment.	Low
GOAL 8: Renewable Energy				
8.1	20% of annual electricity consumption from renewable sources by FY 2020. (2014 target: 7.5%)	LM exceeded the 2014 interim target. 34.6% of LM's energy usage came from renewable energy sources in FY 2014. The major reason LM increased the percentage of renewable energy over last year is that LM used less energy at the Tuba City site and operated the 285 kW photovoltaic system there for a full year.	Review current LM renewable energy produced onsite vs. current renewable energy credits purchased and investigate possible renewable energy projects on LM sites that could replace the purchased renewable energy credits.	Low

Table 1 (continued). DOE Goal Summary Table

SSPP Goal #	DOE Goal	Performance Status Through Fiscal Year (FY) 2014	Planned Actions & Contribution	Risk of Non-attainment
Goal 9: Climate Change Adaptation				
9.1	Determine risks to missions, operations, and people; build resilience; engage in regional and local coordination; remove barriers and modernize policies and programs to encourage adaptation and resilience.	LM is working on climate-change-specific adaptation efforts with disposal cells and conducted an internal climate change adaptation awareness campaign. LM personnel attended climate change conferences and participated in climate change adaptation forums.	Develop and evaluate LM adaptation plan using the Climate Change Adaptation Vulnerability Survey issued by the Sustainability Performance Office. Continue assessing climate impacts to LM mission, including any potential impacts to long-term disposal cell cover performance.	Low
Goal 10: Energy Performance Contracts				
10.1	Utilization of Energy Performance Contracts.	The Federal Energy Management Program's ESPC ENABLE initiative was investigated as a source of funding for energy-efficiency improvements at the Interpretive Center at the Weldon Spring, Missouri, Site. After research, it was decided that any improvements made would not achieve the paybacks necessary to make this a viable ENABLE project.	LM has not identified any viable, energy performance contract projects for 2015. LM will evaluate future projects for energy performance project viability.	Medium

Abbreviations used in the Executive Summary:

EISA Energy Independence and Security Act
EPEAT Electronic Product Environmental Assessment Tool
ESPC Energy Savings Performance Contract
FY fiscal year
GP Guiding Principle
GSF gross square feet
HPSB high-performance and sustainable building
IAEA International Atomic Energy Agency
ILA industrial, landscaping, and agricultural
PUE power utilization effectiveness
SSPP Strategic Sustainability Performance Plan

This page intentionally left blank

II. Performance Review and Plan Narrative

1 GHG Reduction and Comprehensive GHG Inventory

1.1 Scope 1 and 2 GHG Emission Reduction

LM's overall Scope 1 and 2 GHG reduction strategy is to identify the emission sources and develop ways to reduce emissions.

The U.S. Department of Energy (DOE) Strategic Sustainability Performance Plan (SSPP) committed DOE to reducing its greenhouse gas (GHG) Scope 1 and 2 emissions by 28 percent by 2020 compared to the 2008 baseline.

1.1.1 Performance Status

LM produced 48.7 percent fewer Scope 1 and Scope 2 GHG emissions in 2014 than in 2008 and 12.3 percent less than in 2013. Based on current annual GHG emissions, LM has met and expects to continue to meet the 28 percent reduction by 2020 goal.

Purchased energy use decreased approximately 33 percent from 2008 to 2014 on the basis of 2014 data.

LM used 0.014 pound methane calibration gas, which is typically used to measure analytes and in gas chromatography. Fewer gas chromatography activities were conducted in 2014, resulting in a significant reduction compared to 0.152 pound used in 2013.

LM used 3,617 gallons of ethanol (E85) alternative fuel blend in 2014 compared to 0 gallons in the baseline year, 2005.

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

Purchased energy is shown in Tab 3.1 of the Consolidated Energy Data Report (CEDR). (Energy use is nearly proportional to GHG production). Fugitive emissions are now considered a Scope 1 GHG. These data are included in the fugitives and refrigerants tabs of the CEDR. Fleet data from the Federal Automotive Statistical Tool (FAST) database is included in Tab 10 of the CEDR. LM does not have any industrial processes that would require reporting in Tab 6.3 of the CEDR. Scope 1 and 2 GHGs are calculated with data from the following CEDR tabs: Tab 1.2a, "Performance Summary"; Tab 1.2b, GHG Emissions Summary"; Tab 3.1, "Energy & Water"; Tab 3.2a, "Operating On-Site RE"; Tab 3.2b, "Purchased RE"; Tab 6.1, "Mixed Refrigerants"; Tab 6.2, "Fugitive F-gases"; Tab 7.1a, "On-Site WWT"; and Tab 10, "Fleet Fuel (Optional)."

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

LM used 439.6 pounds of carbon dioxide (CO_2) compressed gas for well sampling in 2014 compared to 834.8 pounds in 2013. The 2013 values were most likely related to an extensive one-time sampling event conducted at the Mound, Ohio, Site for Operable Unit 1. The sampling

event was part of an investigation of whether to replace the pump-and-treat system with monitored natural attenuation as a long-term remedy for the residual volatile organic compounds in the groundwater. This resulted in greater than usual sampling-related CO_2 emissions, which was not expected to recur and did not recur in 2014. If monitored natural attenuation is approved as the remedy, it will reduce future sampling events and related CO_2 emissions.

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

LM reduced the number of servers via consolidation to virtual machines, continuing the 2009 effort. In 2014 LM increased its virtual-capable physical devices from 21 to 29, and the virtual servers from 157 to 214, thus eliminating unnecessary physical servers. Virtualization allows one physical server to virtually perform the function of up to 10 individual servers, which reduces direct power use and space utilization. It also reduces server cooling, which requires considerable energy.

In 2005 the guidelines for FAST were as follows: Estimate the total amount of fuel used in your alternative fuel vehicle (AFV) Fleet for the listed year. Include conventional fuel and diesel and any alternative fuels in the estimate. All fuel consumed in E85-capable vehicles was reported in FAST as E85 fuel, although no E85 fuel was available in 2005 and 2006. Therefore, the numbers reflected in FAST for 2005 and 2006 are petroleum-based fuel, not E85.

LM's SOARS (System Operation and Analysis at Remote Sites) collects data from 19 sites in nine states and transmits the information to servers in the LM office at Grand Junction, Colorado. Active remediation systems operate more efficiently with SOARS. SOARS reduces staff travel to remote sites, thus conserving energy, protecting natural resources, and reducing GHG emissions.

In 2012, fugitive emissions, including sulfur hexafluoride (SF_6), became part of Scope 1 GHG emissions calculations. At that time LM surveyed its use of SF_6 and concluded it was not using SF_6 or maintaining SF_6 in its inventory, and that is still true for 2014. The LM chemical inventory is updated once a year and is used to track and monitor the use of all chemicals, including any fluorinated gases.

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

In 2013 LM made several changes to onsite wastewater treatment data that impacted Scope 1 fugitive emissions. These changes included more complete and accurate systems representation for the Weldon Spring, Missouri, Site and the Fernald, Ohio, Site. Additionally, the Weldon Spring Interpretive Center and the Fernald Preserve Visitors Center are both served by onsite wastewater treatment systems. To better align with Federal Greenhouse Gas Accounting and Reporting guidance, visitor numbers for those sites were included for the first time in 2013. These updates impacted the baseline and subsequent year emissions. Adjustments to the onsite wastewater treatment data also affected the offsite contracted wastewater treatment data, which impacted Scope 3 GHG emissions data. The 2014 reported data revealed that the 2008–2012

Weldon Spring visitor numbers reported in 2013 were entered under the new wastewater treatment system instead of the old system that had actually served those visitors. For 2014, the 2008–2012 visitor numbers were moved to the column of the correct wastewater treatment system that was in place at that time.

Employee numbers at Weldon Spring and visitor numbers for both the Weldon Spring Interpretive Center and the Fernald Visitors Center increased in 2014, resulting in an increase of onsite wastewater-treatment-related GHG emissions.

The 2014 preloaded CEDR has LM's 2012 and 2013 fugitive gas information noted in the **Default Approach** columns; however, LM originally reported that information in the **Simplified Material Balance Approach** columns. The change in columns for 2014 did not affect the resulting emission quantities or CO_2 equivalent numbers, which are the same as what LM reported for those years.

1.1.2 Plans and Projected Performance

Discuss plans and expectations for 2015 and beyond:

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

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

LM will continue to replace inefficient process equipment and install electricity-saving control systems, thus decreasing life-cycle costs and increasing systems' efficiencies.

LM will undertake cost-effective, renewable energy projects.

When possible, LM will reduce GHG emissions. LM will inspect chemical containers and gas cylinders as necessary, to reduce potential spills and leaks.

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

LM is expected to meet this goal.

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

None.

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

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

- Reduce fleet emissions by following better vehicle use guidelines and acquiring additional hybrid and flex-fuel vehicles.
- Where cost-effective, increase the number of SOARS sites. A current project to install instrumentation for a new groundwater treatment system at the Monticello, Utah, Disposal and Processing Sites is in progress.
- With pending obsolescence of T12 fluorescent tubes, conduct a survey of LM's T12 fluorescent fixtures, then estimate costs for replacing with more efficient T8 tubes or other technology. Similarly, survey the number of remaining lighting circuits without motion sensor switches. Review and compare current LM renewable energy produced onsite to purchased renewable energy credits and consider renewable energy projects on LM sites to replace purchased renewable energy credits.
- In accordance with "Freeze the Footprint" guidelines, set office size and/or configuration standards, reconfigure current office space, consider sharing office space, and house employees in office space that costs less to maintain and reduces energy costs.

e. If needed, request CEDR project number technical assistance

None.

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

See information provided in Section 12.1.

1.2 Scope 3 GHG Emissions Reductions

According to Executive Order (EO) 13514, LM must reduce its Scope 3 GHG emissions 13 percent by 2020, relative to a 2008 baseline. In 2014, LM's largest sources of Scope 3 GHG emissions were employee commuter travel, air travel, and transmission and distribution (T&D) losses.

1.2.1 Performance Status

LM's Scope 3 emissions are from employee commuting, business ground and air travel, T&D losses, contracted (offsite) wastewater treatment, and contracted (offsite) municipal waste disposal. The status of each of these categories is discussed below. According to Scope 3 GHG calculations, LM reduced emissions an estimated 30.8 percent from the 2008 baseline, which exceeds both the 2014 interim goal of a 5 percent decrease and the overall goal of 13 percent reduction by 2020. Environmental Management System (EMS) staff calculated the above reduction using 2013 data as placeholders for the outstanding LM business travel data that DOE-Headquarters will enter after LM submits this report.

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

Performance related to these goals is in the following CEDR tabs: Tab 1.2a, "Performance Summary"; Tab 1.2b, "GHG Emissions Summary"; Tab 3.1, "Energy & Water"; Tab 3.2b, "Purchased RE"; Tab 7.1b, "Off-Site WWT"; Tab 8.1, "Air Travel"; Tab 8.2, "Ground Travel"; Tab 8.3, "Commute"; and Tab 9.1b, "Off-Site Landfill MSW."

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

Employee Commuting

CO_2 emissions related to employee commuting increased from the 2008 baseline of 838.5 metric tons to 917.6 metric tons in 2014, which was a slight decrease from 1,112.8 metric tons in 2013.

Business Ground and Air Travel

LM's mission is to manage Cold-War-related, post-closure sites and protect human health and the environment at those sites. Because of the nationwide distribution of LM sites, travel is an integral part of day-to-day LM activities. Overall LM-activity-related travel increased in 2014. LMS air-travel-related GHG emissions were higher than ground-travel-related emissions. LMS air-travel-related GHG emissions increased by 13 metric tons in 2014 from 2013. LMS ground-travel-related GHG emissions increased by 24 metric tons from 2013. The SPO will be providing additional LM federal employee business travel information to the CEDR at a later date.

T&D Losses

In spring of 2013 LM staff began operating a new 285-kilowatt (kW) photovoltaic solar electricity system at the Tuba City site. Combined with the separate existing photovoltaic system, there is now a total of 336 kW of onsite solar electricity generation. With full sun, the system is capable of meeting up to 35 percent of the Tuba City site's daytime electrical requirements during normal plant operation. Excess power generated during periods of plant shutdown is supplied to the grid. Night operations still require utility-based electricity. This photovoltaic (PV) solar system helps reduce CO_2 emissions by reducing the amount of purchased electricity and associated T&D losses.

In fiscal year (FY) 2012, a Fernald site project placed about half of their overhead electrical lines underground and replaced associated oversized, inefficient, electrical transformers. LM began Phase II of this project, to replace many of the remaining overhead lines underground and to replace more oversized, inefficient, electrical transformers; the project was started in summer 2014 and will be completed in early FY 2015. In FY 2012, LM coordinated with its Grand Junction (GJ) site lessor to begin upgrade of LM leased office space with energy efficient heating/cooling systems, solar panels, windows, and lighting. The GJ site lessor completed these upgrades in 2014.

Contracted (Offsite) Wastewater Treatment

Sanitary wastewater from LM facilities is treated offsite, with the exception of onsite treatment systems at the Monticello, Fernald, and Weldon Spring sites. The calculation for this data is based on standard usage factors, the number of employees, and a standard number of workdays. For this reason, any water efficiencies realized from systems served by offsite treatment are not part of this reporting section. Onsite wastewater treatment decreases the amount of waste that would otherwise be sent for offsite treatment.

Contracted (Offsite) Municipal Waste Disposal

LM collects and analyzes its municipal solid waste, construction debris, and recycled materials twice a year. LM continues to promote recycling and reuse during project planning activities. Waste minimization is a mandatory part of subcontract language to ensure that all personnel working on LM projects reduce the amount of waste generated and recycle to the extent possible.

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

LM reduced Scope 3 GHG emissions by about 30.8 percent in 2014 from the 2008 baseline year. Legacy Management Support (LMS) staff members continue to use information from the DOE National Training Center course *Scope 3 Indirect Greenhouse Gas Emissions: A Guide for Meeting DOE's FY 2020 Targets* to determine the applicability of suggested reduction efforts for LM sites.

Employee Commuting

LM continued to promote carpooling, alternative work schedules, and work-from-home days to save transit time and reduce GHG emissions. To reduce personal vehicle use during lunch periods, the LM Employee Association sponsored onsite luncheons at some sites, as well as onsite, commercial food deliveries. LM conducted a new commuter survey based on (1) information in the *Consolidated Energy Data Report (CEDR) Technical Support Document (TSD)*, also known as the CEDR Technical Support Document, and (2) questions from the U.S. General Services Administration (GSA) Commuter Survey Tool that is part of the larger GSA Carbon Footprint Tool. Survey design flaws impacted the results and required more extrapolation than usual in order to achieve the CEDR data entry points. The lessons learned from this year's commuter survey effort will help greatly in the design of the 2015 survey.

Business Air and Ground Travel

To reduce business travel to the extent practical, LM employees consolidate trips, use video and teleconferences instead of face-to-face meetings, travel only when necessary, and carpool when possible during business trips. LM utilized webinars to enhance job skills, as well as other seminars and training sessions provided by federal and state agencies and educational institutions.

LM conducted its annual EMS Management Review via videoconferencing, which significantly reduced travel. Thirty-seven individuals participated from five different locations. Additionally,

administrative team members carpooled from Grand Junction, Colorado, to their workshop in Westminster, Colorado. Six team members from Grand Junction attended the workshop. They traveled in two GSA vehicles. While in Westminster, they also provided in-city transportation for additional team members who traveled by airplane, eliminating the need for rental cars. By staying at the same hotel, they were able to carpool to the meeting location each day.

LM evaluated in-house Cisco TelePresence Management Suite tracking and reporting tools. This system tracks video conference calling and provides an estimated CO_2 savings report; however, it does not track audio-only teleconferencing. LM frequently uses audio-only teleconferencing, which provides additional efficiencies and CO_2 savings. LM tracked 860 video conferences from December 2013 to September 2014. Monthly conference activity ranged from 55 to 118 conferences. According to the CO_2 savings report, LM has saved an equivalent of 1,800 metric tons of equivalent CO_2 emissions by videoconferencing.

T&D Losses

LM continues to upgrade antiquated systems and increase efficiencies at LM sites where feasible. T&D losses have decreased by 21 percent relative to 2013 and have decreased 49 percent from the 2008 baseline. The Tuba City treatment plant did not operate during part of 2014, which may have reduced some associated T&D losses. The Tuba City solar photovoltaic system reduces purchased energy use and CO_2 emissions, including T&D losses, by more than 10 percent annually. Three extraction wells at the Fernald site were shut down, but the pumping rates of many of the 20 remaining wells increased. In addition, the Fernald Converted Advanced Wastewater Treatment system was operated more in 2014 due to the increased well-field pumping rates.

Contracted (Offsite) Wastewater Treatment

LM's 2014 CO_2 emissions from offsite wastewater treatment decreased slightly from 2013 (a difference of 0.07 metric ton anthropogenic CO_2) and remained higher than the 2008 baseline. Anthropogenic CO_2 increased from 0.985 metric ton in 2008 to 1.741 metric tons in 2014, most likely because the number of LM employees serviced by offsite wastewater treatment systems increased by 84 percent from 2008 to 2014.

Improvements were completed to the onsite wastewater treatment system at the Weldon Spring site. This eliminated the need to send waste offsite for treatment, thus reducing emissions in this area.

Contracted (Offsite) Municipal Waste Disposal

In 2014, LM achieved a total of 60 percent solid waste diversion and an 82 percent diversion of construction debris from landfills. LM continuously promotes recycling and reuse during project planning activities.

The LM Waste Minimization and Pollution Prevention (WMP2) team is completing a pollution prevention opportunity assessment (PPOA) on the Building 12A demolition at the Grand Junction, Colorado, Office Site, which piloted new waste minimization guidance for construction debris diversion. The PPOA will be completed later in calendar year (CY) 2014 when the project

is complete. Reuse and recycle quantities for such materials as appliances, fixtures, metals, concrete, R-22 refrigerant, lamps, and many other items were tracked as part of this assessment, and are reflected in the final 2014 recycled quantities and percent diversions for both solid and hazardous wastes and construction debris. Building 12A project recycling efforts diverted 2,646 pounds of solid waste material from the landfill.

Information was collected on the feasibility of third-party composting at the Grand Junction office site. A third party that could collect compostable materials from the site was identified, but there were certain limitations in what they could accept and logistical complications that impacted feasibility.

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

Employee Commuting

The 2014 LM commuter survey was distributed to all LM federal and contractor employees, including employees at the Forrestal office. Forrestal employee commuter data is accounted for separately in the Forrestal EMS. However, some Forrestal LM employee commuter data was included in the LM commuter survey data pool. Forrestal employee responses could not be extracted from the data pool due to survey design flaws. LM adjusted employee numbers for the commuter data calculations to balance the extrapolation, but the survey results are slightly skewed due to those responses.

Business Ground and Air Travel

In 2013, the SPO requested a review and update of several entries in CEDR Tab 8.2 related to ground travel. LM made several adjustments based on this review, by reducing the mileage for 2008 (baseline) and 2010 to include only the contractor. During the review, LM noticed that several other entries had been changed by SPO. As a result of a subsequent discussion with SPO to clarify the entries, it was agreed that one of the 2008 (baseline) entries for federal employee mileage was in error and could be removed from the tab. 2014 federal employee mileage is a placeholder reflecting the mileage for the previous year; this was suggested by SPO since the true mileage will be provided by SPO at a later date.

1.2.2 Plans and Projected Performance

Discuss plans and expectations for 2014 and beyond:

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

Employee Commuting

LM will continue to encourage employees to carpool and use public transportation to the extent possible. LM will also work to increase telecommuting options through mutual alternative work

agreements that are designed to reduce commuting days, thereby reducing fuel use and emissions.

Business Ground and Air Travel

LM will continue to use teleconferencing services and virtual-presence software to conduct meetings and will continue to reduce business travel to the extent practical.

Where feasible, LMS personnel will share business rental cars while attending out-of-town meetings and events. LMS demonstrated this in a 2014 Administrative Team retreat, and similar planning considerations are expected to occur for other occasions.

T&D Losses

Future efficiencies gained through routine and nonroutine upgrades of electrical systems and heating, venting, and air-conditioning (HVAC) systems at several LM sites will continue to reduce T&D losses and, subsequently, CO_2 emissions.

Contracted (Offsite) Wastewater Treatment

If the number of employees at sites serviced by offsite wastewater treatment continues to increase, these emission totals will also continue to increase. It is likely that the workforce size will remain the same or increase slightly during 2015 and the following years.

Contracted (Offsite) Municipal Waste Disposal

- Excess materials will be donated or recycled. These actions and other ongoing recycling efforts will continue to support the reduction of CO_2 emissions from landfills.
- LM will continue to use the guidance for solid waste diversion strategies which should result in reductions in municipal, industrial, and hazardous waste.
- A PPOA was initiated during the planning process for the demolition of Building 12A at the Grand Junction office site. The PPOA will be completed once the project concludes in late CY 2014. Similar efforts are expected to increase diversion of solid waste and construction debris.
- LM will be reviewing the recycling and composting programs at select sites for potential improvement opportunities.

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

LM is expected to meet this goal.

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

None.

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

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

Employee Commuting

Conduct an improved 2015 Commuter Survey. Information gathered from the survey will be used to further identify opportunities for initiatives in this area. LM will also continue to explore mutual alternative work schedule agreements.

Business Ground and Air Travel

Continue to evaluate and implement ways to reduce business ground and air travel.

T&D Losses

Perform energy audits to identify system modifications or equipment replacements that could increase energy efficiency. Energy audits are planned for the Grand Junction, Colorado, Disposal Site; the Rifle, Colorado, Disposal/Processing Site (Old Rifle); and the Pinellas County, Florida, Site before the end of FY 2015. System modifications currently being implemented for the Fernald and Tuba City sites will help increase energy efficiency, reducing T&D losses and CO_2 emissions.

Contracted (Offsite) Municipal Waste Disposal

Complete the Grand Junction office site Building 12A demolition PPOA.

Incorporate the LMS *Guidance for Implementing Solid Waste and Construction Debris Diversion Strategies* into planning other LM projects.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

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

2.1 Energy Intensity Reduction

The National Energy Conservation Policy Act (NECPA), as amended by the Energy Independence and Security Act (EISA) in 2007, requires DOE to reduce its energy intensity by 30 percent by 2015 from a 2003 baseline.

2.1.1 Performance Status

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

Performance related to these goals is reported in CEDR Tab 1.2a, "Performance Summary," and in the Energy Star Portfolio Manager. Training information is reported in CEDR Tab 2.1, "Funds, Meters, Training."

LM's current energy intensity use, based on its 2014 data calculated in Tab 1.2a of the CEDR, is 249,591 British thermal units per gross square foot (Btu/GSF) compared to the 2003 baseline of 257,678 Btu/GSF per year (Table 2). This is a 3.1 percent decrease from 2003, which is a significant change from last year's 55.5 percent increase. The improvement in FY 2014 is mainly due to the Fernald wells being excluded from this calculation as they have a mission-driven purpose and were metered this year.

Table 2. LM Energy Intensity Use (Btu/GSF per Year)

	DOE Goal FY 2015 (Btu/GSF)	FY 2003 (Btu/GSF)	FY 2008 (Btu/GSF)	FY 2009 (Btu/GSF)	FY 2010 (Btu/GSF)	FY 2011 (Btu/GSF)	FY 2012 (Btu/GSF)	FY 2013 (Btu/GSF)	FY 2014 (Btu/GSF)
Energy with RECs	178,208	257,678	636,748	236,202	204,311	266,135	288,371	400,898	249,591
Gross Square Feet		3,215,306	26,374	72,206	114,797	71,629	71,015	37,640	37,400

Notes:
All values denote the site-delivered energy, not the source energy.
See Figure 1 below for a summary of the figures used in the energy use intensity (EUI) calculation

Abbreviations:
REC = Renewable Energy Certificate

Figure 1 graphically shows the percent change in energy use intensity (EUI) since 2008. A negative number means that our calculated EUI has improved from the 2003 baseline.

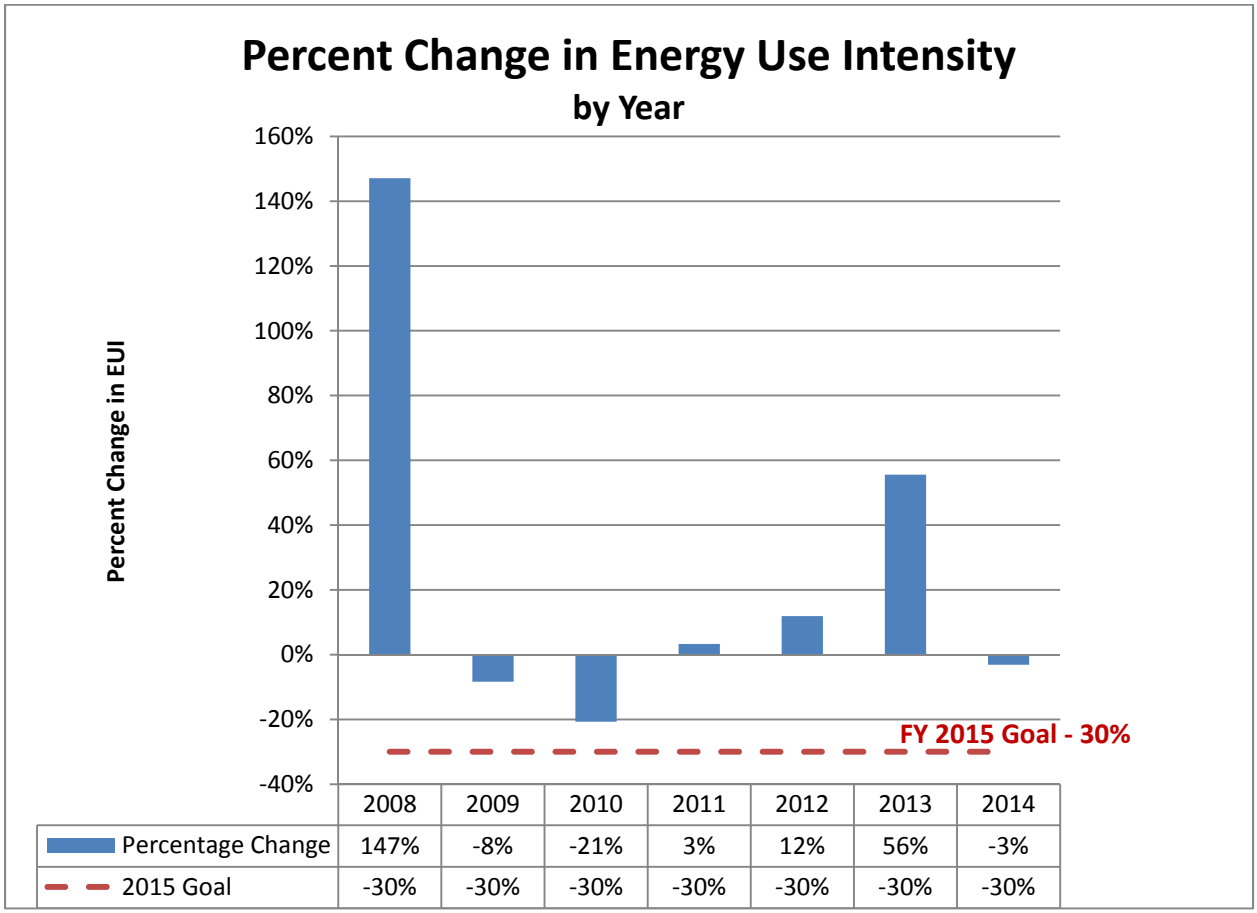

Figure 1. Percent Change in Energy Use Intensity

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

LM excludes several buildings and processes from the energy intensity goal, in accordance with the *Guidelines for Establishing Criteria for Excluding Buildings* issued by the DOE Federal Energy Management Program on January 27, 2006.

Attachment B includes the final Facilities Information Management System (FIMS) excluded building list and certification letter.

LM's highest energy use is not in buildings but rather in other structure and facility (OSF) processes, such as the 20 large extraction wells at the Fernald site (which consume more than 50 percent of the power used by LM). However, in June 2014 new controls were installed that include dedicated meters for the Fernald well field. LM is using the EISA Exclusion G, which allows mission-related energy use (that is separately metered and reported annually) to be excluded from the energy intensity calculation. Table 3 below shows the additional amount of energy that will be excluded from the EUI calculation in 2014 since the new Fernald well field control system has been in operation.

Table 3. Metered Fernald Well Electrical Use

	2014		
Month	July	August	September
kWh	99,810	306,787	329,819

The Tuba City site plant is the second largest energy user for LM, but it was not in operation for much of 2014. After several maintenance shutdowns, the Tuba City staff restarted the treatment system in June 2014, which raised electricity use to previous levels.

In 2009 LM installed the solar thermal system at the Tuba City site, which heats water for the water treatment system. Because of the aforementioned, water treatment system shutdowns in 2014, LM staff also did not operate the solar thermal system during those shutdowns. LM energy conservation team members are analyzing how to determine the Btus the thermal system saves.

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

The Fernald site has reduced its energy consumption each year since 2008 when LM began tracking its energy use. This is due to Fernald staff replacing inefficient equipment, and improving groundwater extraction processes. As illustrated in Figure 2, Fernald groundwater pumping efficiency as expressed in gallons of water pumped per kWh of electricity expended has increased since FY 2008. Fernald site staff attributes the increased efficiency to their more robust, well maintenance program implemented in 2008 and subsequently installing more efficient, pumps, motors, and controls.

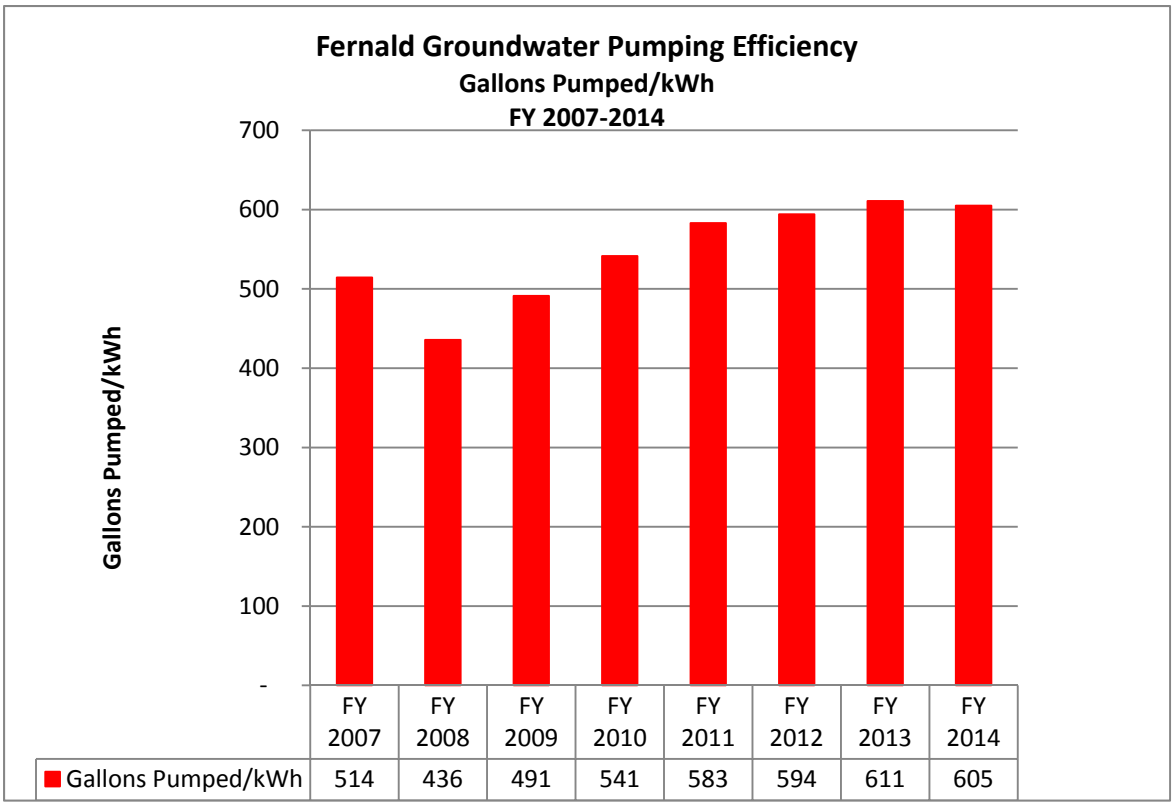

Figure 2. Fernald Site Groundwater Pumping Efficiency

Upgrading antiquated systems and increasing efficiency at LM sites were primary objectives during 2014, especially updating the Fernald site well field control system. As evidenced in Figure 3, overall electrical consumption at LM sites has been reduced 33 percent since 2008 and 9 percent since 2013.

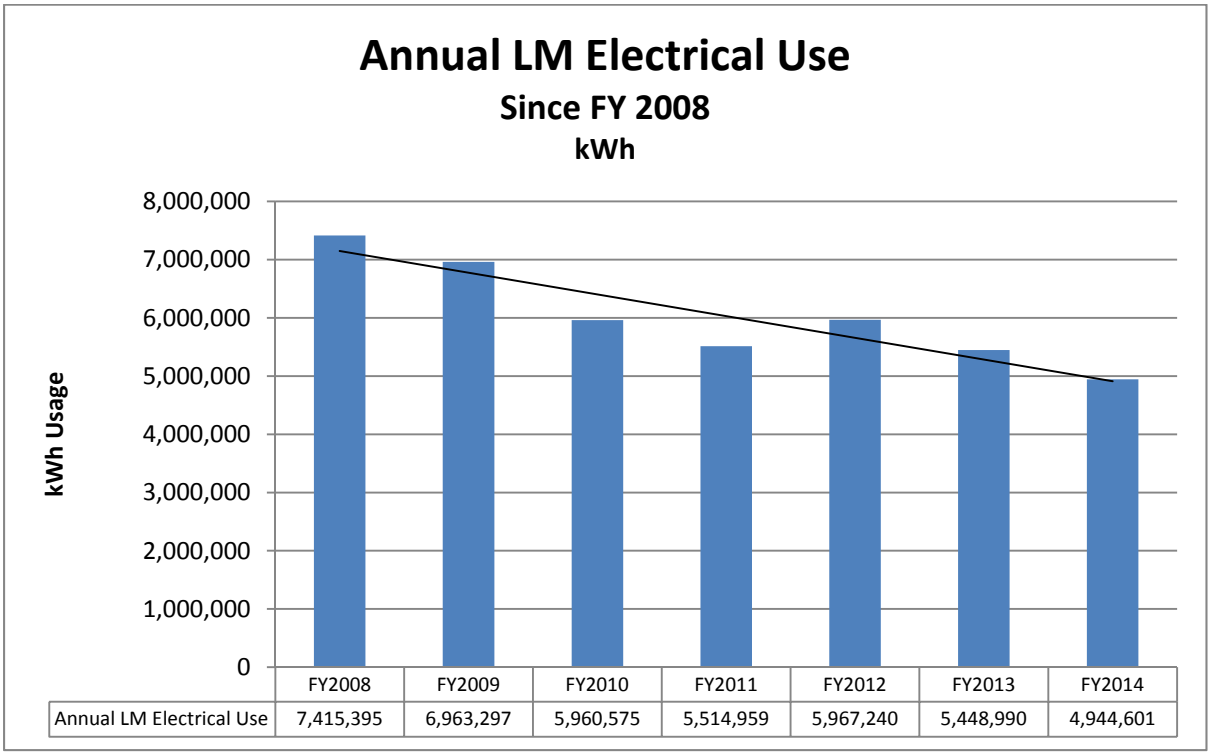

Figure 3. Annual LM Electrical Usage

Activities Related to Energy Intensity

LM continued to use best management practices for energy reduction, such as setback HVAC controls, at several locations.

LM developed policies to revise the methods for computer backups and instituted operating-system updates to help reduce electrical energy use. Additionally in 2014, backup services for the three, small data centers were transitioned to the primary data centers. This action resulted in a reduction of electrical usage with the elimination of the small data center tape libraries and the need for tape storage at those locations. Environmental benefits were also realized by eliminating the need to ship tapes from the three small data centers to the primary data centers twice weekly for offsite disaster recovery storage.

The LMS contractor continues to have employee incentive programs to reward exceptional individual and team performance in increasing energy efficiency and water conservation, deploying renewable energy, minimizing waste, reducing utility costs, and reducing GHG emissions.

Some LM managers have results-based energy management as a component of their performance evaluations.

Audits

In keeping with the requirement for conducting energy audits at each site every four years, four energy audits were conducted in 2014. Desk audits were conducted on the Monticello and Monument Valley sites in December 2013 and on the Shiprock site in May 2014. Desk audits were chosen because these sites use minimal electricity. A site walkdown energy audit was conducted at the Tuba City site in June 2014. A walk through audit was chosen because the Tuba City site is the second largest LM energy user after the Fernald site. Audit reports, which include recommendations for improving energy efficiency, were shared with the appropriate site leads/managers.

Space Management

There was further server reduction via consolidation to virtual machines, continuing the effort that started in 2009. In 2014 the number of virtual-capable physical devices was increased from 21 to 29, with the number of virtual servers increasing from 157 to 214, thus avoiding proliferation of physical servers. Virtualization allows for one physical server to virtually perform the function of up to 10 individual servers, which results in a reduction in direct power use. It also results in a reduction in server cooling needs, which typically consume a significant amount of energy. In addition, 10 physical servers, previously used on the Yucca Mountain project and transitioned to LM, were retired and excessed.

Certified Energy Managers/Training

One staff member is a certified energy manager and took required training during the past 3 years in order to be recertified for another 3 years.

Training on energy conservation and recycling is already embedded in the periodic EMS sustainability training provided to LM employees. The LMS contractor has included this information in their employees' orientation programs.

Deferred Maintenance

Deferred maintenance for energy consuming buildings/facilities is identified every 5 years through the Condition Assessment Surveys (CASs) required annually by DOE Order 430.1B. The most recent cycle of assessments for LM occurred in 2012/2013. Deferred maintenance identified in these assessments will be addressed prior to the end of 2018, pending funding availability.

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

LM continues to have concerns associated with reporting data for the baseline and subsequent years (see Attachment F).

2.1.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

With existing T12 fluorescent tubes being phased out, survey the number of existing LM T12 fluorescent fixtures, then estimate the cost to upgrade or replace them with newer, more efficient T8 tubes or other technology. In tandem with this goal, survey the number of remaining lighting circuits that still don't have motion sensor switches.

As a follow on to significant upgrades made to the Fernald site electrical systems during 2012, further upgrades were begun in late FY 2014 and will be completed in early FY 2015. The earlier upgrades should result in decreased T&D losses due to the replacement of oversized, inefficient transformers.

Energy audits are planned for the Grand Junction Disposal, Rifle, and Pinellas sites in 2015.

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

LM expects to meet the energy intensity goal of a 30 percent reduction by 2015 because of the following conditions:

- Most of LM's energy consumption is for mission-related systems that are not buildings, such as the 20 large extraction wells for remediation at the Fernald site, which consume over 52 percent of total LM energy use.
- Several mission-related energy intensive processes were excluded in 2014, including the Fernald wells after meters were installed in June. This reporting change should allow LM to meet the 30 percent reduction goal for energy intensity next year when the well energy use will have been excluded for a full year.

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

None.

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

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

- Investigate updating the water treatment technology at the Tuba City with more efficient systems that reduce the energy use.
- Continue to use best management practices for energy reduction at several locations, such as installing setback HVAC controls, retrofitting T12 fluorescent fixtures with T8 fluorescent tubes and associated ballasts, using benchmark utilities in Energy Star Portfolio Manager, installing meters, and performing assessments and verifications.

- Continue to assess energy reduction as a factor in the decision process for maintenance and repairs. This includes identifying opportunities and checking status on deferred maintenance for energy consuming buildings/facilities every 5 years via the CAS required annually by DOE Order 430.1B.
- Continue to train additional employees. Employees will continue to attend energy related workshops or symposiums to enhance their current knowledge base and maintain certifications.

e. Request for technical assistance with reference to CEDR project number, if needed

Assistance from SPO and the Federal Energy Management Program (FEMP) may be needed to help determine if baseline data have been identified correctly. The historical data used for the baseline may be incomplete and need to be reevaluated. Since the baseline data might not reflect true energy intensity at that time, the percent change might not reflect the actual trend.

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

See information provided in Section 12.1.

2.2 EISA Section 432 Energy and Water Evaluations

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

2.2.1 Performance Status

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

LM conducted water audits to assess water metering conditions at the Grand Junction Disposal and Rifle sites in 2014. Energy audits were conducted at Monticello and Monument Valley in December 2013, at Shiprock in May 2014 and Tuba City in June 2014. Recommendations from the audits were submitted to the site leads for consideration. Performance related to these goals was reported in the Compliance Tracking System for June 2014, and on CEDR Tab 11, "*Covered Facilities.*"

Utility data for benchmarking LM facilities is entered quarterly into the Energy Star Portfolio Manager, uploaded into the EISA 432 Compliance Tracking System (CTS) database, and reported on CEDR Tab 3.1, "Energy & Water."

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

None.

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

When feasible, water and energy audits are completed during regularly scheduled site inspections or a CAS. This reduces the number of trips and conserves natural resources (especially fuel).

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

None.

2.2.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM will continue to rotate selection of audited sites to ensure that 100 percent of the sites are audited every 4 years to meet the requirements of EISA Section 432.

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

LM is expected to meet this goal.

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

None.

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

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

- Conduct one water audit between July 2014 and June 2015. The proposed location is the Tuba City, Arizona, Disposal site.
- Perform energy audits for Grand Junction Colorado, Disposal Site, Rifle, Colorado, Disposal/Processing Site (Old Rifle) and Pinellas County, Florida, Site before the end of FY 2015.
- Continue to benchmark EISA-covered facilities in Energy Star Portfolio Manager.
- Improve process for performing measurement and verification of implemented energy saving measures and projects.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

2.3 Metering

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

2.3.1 Performance Status

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

Of the EPAct 2005 appropriate buildings, 100 percent are metered for electricity, and 100 percent of buildings with natural gas usage are metered. However, most of LM energy is consumed by processes not associated with buildings. DOE Metering Guidance of June 30, 2011, states, "Install electricity meters on individual buildings or processes at each site so that these individually metered buildings and processes account for at least 75 percent of the site's total electricity use by October 1, 2011, working toward a goal of 90 percent by October 1, 2012." Therefore, mission-related metered electric processes were included in the appropriate building count in 2013. As shown in CEDR Tab 2.1, "Funds, Meters, Training," with the installation of metering on the LM well field in mid-2014, 65 percent of LM electricity usage is metered in 2014, with 98 percent expected to be metered in 2015 and after.

LM has no steam or chilled-water systems. All of the appropriate EPAct 2005 buildings are metered for potable water. Performance related to these goals is reported in the FIMS database and in Tab 2.1 of the CEDR.

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

Electrical

In 2014, a new control system, including individual metering, for the Fernald well field was installed and became operational in July 2014. This should allow LM to meter 90 percent of the total energy used after one year of metering.

Water

Standard water meters were installed on two buildings at the Tuba City site to track industrial, landscaping, and agricultural (ILA) non-potable water.

Gas

No major initiatives or changes affected this goal.

Steam and Chilled Water

LM has no steam or chilled-water systems, so metering is not applicable for LM.

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

LM prepared and issued a metering plan to achieve sustainability goals. In addition, LM identified budgeting needs for 2014 as well as 2015 through 2019. LM uses metering information for benchmarking, reporting, system diagnostics and maintenance, and measurement and verification of savings.

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

None.

2.3.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

To the maximum extent practical, LM will install metering devices (either advanced or standard) in each building, in other facilities, and on site grounds to measure electricity and natural gas use. LM does not use steam or chilled water, so plans to meter these utilities are not required. While metering of potable water is not required, LM will continue to meter potable water as a best management practice, where it is cost-effective.

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

In 2015, the new control system at the Fernald well field will allow LM to meter 90 percent of the total energy used.

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

None.

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

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

Electrical and Water

- Evaluate utility (electrical and water) information that is being benchmarked in Energy Star Portfolio Manager.
- Closely track water use using existing meters at the Grand Junction, Colorado, Disposal site to determine an accurate breakdown of water used in the Decontamination Building and the office trailer, respectively, for annual reporting purposes.

Gas

- No additional actions are planned.

Steam and Chilled Water

- LM has no steam or chilled-water systems, so metering is not applicable.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

2.4 Cool Roofs

LM will enhance the overall building thermal performance for all new construction and roof replacements, as warranted, by using cool roofs. The cool roofs shall have a thermal resistance of at least R-30, consistent with former Secretary of Energy Chu's June 1, 2010, memorandum about installation of cool roofs.

2.4.1 Performance Status

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

LM is using the FIMS database to track cool-roof types and total cool-roof GSF.

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

None.

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

Performance related to these goals is promoted and reported as a best management practice in the LMS contractor *Quarterly Performance Assurance Report*.

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

None.

2.4.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM will continue to perform cool-roof assessments as necessary and strive to make all new roofs and replacement decisions in compliance with former Secretary Chu's goal and economic feasibility. These assessments will be coordinated with the scheduling of CASs. Cool-roof life-cycle cost analysis summaries are performed annually on all of LM's owned and pertinent leased buildings.

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

LM will plan to meet this goal, as activities warrant.

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

None.

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

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

- Strive to make all new roofs and replacement decisions in compliance with former Secretary Chu's goal and economic feasibility.
- Participate in project planning meetings to ensure any planned new or replacement roofs meet this requirement.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

2.5 Existing High-Performance and Sustainable Building (HPSB) Buildings

EO 13514 and the DOE SSPP require that 15 percent of the number of existing buildings and building leases (not square footage), and only buildings greater than 5,000 GSF, must meet Guiding Principles or achieve higher sustainability certification by 2015. EO 13514 and the DOE SSPP stipulate that progress must continue toward 100 percent compliance for the entire building inventory that is greater than 5,000 GSF.

2.5.1 Performance Status

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

Performance related to these goals is reported in FIMS; in CEDR Tab 3.4, "Bldg. Inventory Changes"; and in the Energy Star Portfolio Manager.

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

Existing Buildings

Sustainable improvements to leased Buildings 12 and 938 at the Grand Junction office site were completed in FY 2014. LM has exceeded the compliance goal of 15 percent. Currently 71 percent of their existing owned and leased buildings greater than 5,000 GSF meet the Guiding Principles (GPs). See leased buildings for additional information.

Leased Buildings

A few of the energy and water conserving measures (ECMs) in Buildings 12 and 938 include the installation of new and/or repurposed mechanical equipment, motion sensors to lighting controls in offices, carpet made from 44.4 percent recycled content materials, reused office furniture from other sites, and individual gas and electric meters. Some best practices already employed in these buildings include HPSB GP Occupant training, retro-commissioning and energy audits, and managing utilities in Energy Star's Portfolio Manager.

The data center previously located in Building 12A (6,757 GSF) at the Grand Junction office site was relocated to a smaller, newly renovated space (Building 46; 3,970 GSF) in FY 2013, thereby reducing the data center's leased footprint. Building 12A was demolished in FY 2014. This reduced the number of buildings and total square footage in the HPSB inventory.

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

Performance related to these goals is promoted and reported as a best management practice in the LMS contractor *Quarterly Performance Assurance Report*.

In December 2013, National Renewable Energy Laboratory transferred a large amount of used office furniture to LM, consisting of cubicles, desks, chairs, and other items. These were used to accommodate the growing office space occupancy at the Grand Junction and Westminster office sites.

Metering faucets were installed in the restrooms at the Interpretive Center at the Weldon Spring, site, to conserve water and save energy.

A master Excel spreadsheet was created and is used for benchmarking and tracking utilities in LM-owned and leased buildings and other facilities in Energy Star's Portfolio Manager. This spreadsheet has streamlined the sharing of information with other EMS sustainability teams for reporting purposes and for analyzing energy and water utility data. It is located on SharePoint.

HPSB assessment checklists for all owned and leased buildings greater than 5,000 GSF are updated annually, and any changes affecting a building's compliance score are noted. These checklists and accompanying documentation are maintained and updated regularly on SharePoint and in Energy Star Portfolio Manager. Utility data is updated on a quarterly basis.

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

The Legacy Management Business Center (LMBC) in Morgantown, West Virginia, was incorrectly included in the DOE Office of Fossil Energy's FIMS inventory. This error was corrected on April 24, 2014. The LMBC is now included in LM's FIMS inventory as a GSA-Leased building with a signed LM Occupancy Agreement. The square footage increase was not due to new construction, and was given an exemption by the Office of Acquisition and Project Management. This adds one building to the LM inventory, but the effects on sustainability reporting are minimal because LM has an occupancy agreement with GSA (i.e., is not included in LM's HPSB inventory), it is a fully serviced "lease," and is identified as a Leadership in Energy and Environmental Design (LEED) Gold building.

2.5.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM will continue to monitor its building inventory, and will identify and evaluate owned or leased buildings that measure greater than 5,000 GSF and are transitioning to or from LM by 2015. Although LM will continue to pursue meeting 100 percent of the GPs in the remaining buildings greater than 5,000 GSF, there are no GP activities planned for 2015 for the Interpretive Center at the Weldon Spring site since the future utilization of the building is being reviewed.

Because of the influx of new employees and/or transfers to the Westminster, Colorado, office site, expansion into Suite 600, an office space adjoining the existing offices consisting of approximately 3,000 square feet, is under consideration. This expansion could be temporary if a more suitable office/warehouse space is identified after a formal solicitation is issued in early 2015.

Additionally, in early FY 2015, approximately 2,516 square feet of existing, unused office space in the north end of Building 12 at the Grand Junction office site will be added to the existing lease with occupancy to begin shortly thereafter. This should not affect the building's status of already meeting the HPSB GPs in early FY 2014. In accordance with the lease, the landlord must consider sustainability standards for any renovations or modifications.

LM will adhere to GSA green leasing language and DOE green leasing language when pursuing new leased locations.

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

LM is currently exceeding this goal.

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

None.

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

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

- Increase the Sustainable Building's team members' competency and awareness of the HPSB GP process, The FY 2015 target is to have two to three (minimum) team members become certified Guiding Principles Compliance Professionals (GPCPs). The training, materials, and examination are offered at no cost through the Green Building Initiative.
- Continue to be proactive in supporting buildings that are undergoing energy-efficiency and water saving improvements but that (based on square footage and/or construction costs) do

not fall under the requirements of either the HPSB GPs or the third-party certifications described in Goal 2.6 of Table 1. Continue tracking utilities in Energy Star Portfolio Manager and make comparisons to baseline figures to demonstrate improvements in energy and water usage or, if necessary, address areas needing improvement.

- Continue to pursue achieving 100 percent of the GPs in the remaining buildings greater than 5,000 GSF. HPSB assessment checklists will be updated annually, and any changes affecting a building's compliance will be noted. These checklists, utilities, and supporting documentation will be maintained and updated regularly in Energy Star Portfolio Manager. Data from these checklists will be used for FIMS reporting purposes (e.g., data calls) and to respond to requests from DOE-Headquarters.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

In addition to information provided in Section 12.1, LM developed "HPSB GP Building Occupant Training" to assist individual facility managers of buildings that have undergone energy improvement projects. The training will assist the facility managers in instructing building occupants on the day-to-day use of any new equipment, systems, and the building itself (e.g., windows, shades) and provides contact information for addressing concerns or problems with equipment or the building. The training is currently available for trainees. The training will be updated if additional sustainable improvements are made, and will be given on an as-needed basis.

2.6 High-Performance Sustainable Design

To address the requirements in the DOE SSPP, LM has made a commitment to pursue DOE recommendations for third-party certifications and incorporate the GPs into the construction of future buildings, as addressed in the following sections.

2.6.1 Performance Status

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

New construction is located in CEDR Tab 3.4,"Bldg Inventory Changes." No new buildings, 5,000 GSF or larger, were constructed in FY 2014.

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

None.

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

Performance related to these goals is promoted and reported as a best management practice in the LMS contractor *Quarterly Performance Assurance Report*.

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

None.

2.6.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM is exploring the addition of three visitor centers at various legacy locations across the US including Mound, Ohio; Rocky Flats, Colorado; and Grand Junction, Colorado. Arrangements for the visitor centers will vary; the centers may be located on federal or privately owned land, and collaboration is being sought with other groups such as federal agencies or local private groups. Additionally, LM is evaluating the Weldon Spring site to determine how best to accommodate needed improvements to the existing visitor center and temporary office space.

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

LM will pursue attainment of this goal if a new building is scheduled for construction. LM currently has no new buildings scheduled for construction

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

None.

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

- No new-construction buildings or major renovations that fit the criteria of the requirements are planned.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

2.7 Regional and Local Planning

According to the DOE SSPP, LM will pursue actions related to regional and local planning.

LM has ongoing activities at 89 post-closure sites located in 28 states and Puerto Rico. LM has a low personnel count dispersed across nine staffed sites with wide geographic separation, with some being remote locations away from town/city infrastructures, and so LM expends only nominal effort on coordination of transportation and infrastructure planning. Rather, more of LM's local and regional planning efforts are focused on ecosystem, watershed, and environmental management. LM recognizes that such legacy activities are local and that stakeholder involvement is integral to the success of LM operations. LM also makes considerable effort to educate future generations on the historical aspects of the Cold War activities, the enduring environmental impacts of those activities, and how site cleanup can be performed sustainably.

2.7.1 Performance Status—Discuss FY 2014 performance by:

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

None.

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

LM manages legacy land and assets with an emphasis on protecting human health and the environment, asset disposition, and beneficial reuse. To accomplish this goal, LM implements reuse of its real property assets taking into account economic, ecological, social, and cultural factors surrounding each site or particular asset. The preferred reuse option is disposition, which transfers property to others for beneficial reuse and reduces DOE's overall acreage footprint. When sites are transferred to LM for long term custody, every effort is made to accept only the real property assets necessary to perform the LM mission. Reuse possibilities are then evaluated following a formal process for transferred property. Reuse options include renewable energy-related development (e.g., solar); grazing uses; conservation uses (natural resource protection, habitat management); commercial/ industrial uses; community uses; and historical/cultural resource uses.

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

Efforts to Promote Reuse of Assets

In December 2013, a parcel at the Monticello Site was sold through the GSA to the City of Monticello via a Quitclaim Deed. In February 2014, four parcels at the Rocky Flats, Colorado, Site were jurisdictionally transferred from LM to the U.S. Fish and Wildlife Service (USFWS) for inclusion in the Rocky Flats Wildlife Refuge. With the disposition of these parcels, LM not only removed just over 750 acres of land from its inventory but succeeded early in meeting its FY 2016 reuse target of five dispositions of Federal properties.

Transportation/Facility/Renewable Energy Planning

Many of the LM sites are unstaffed or have only a few people working onsite. In addition, several of the staffed sites are in remote locations where public transportation is not available. For these reasons, LM has not participated in regional transportation planning. See 2.7.2, a. Identify planned activities, *Transportation/Facility/Renewable Energy Planning* for ongoing and future activities.

Principles for Sustainable Federal Location Decision

See 2.7.2, a. Identify planned activities, *Principles for Sustainable Federal Location Decision* for ongoing activities.

Watershed and Ecosystem Management

Over 900 acres of the Fernald site have been ecologically restored, with approximately 400 acres of forest, 354 acres of prairies and grasslands, and 140 acres of wetlands and open water. Through an expanding outreach effort, LM is working with local schools to encourage the next generation of scientists and engineers. Fernald site employees develop and use educational curriculum that provide hands-on learning experiences for area students, from elementary grades through college. Regularly scheduled, nature-based and history educational programs for the public, complement the site's school-based outreach activities.

In 2014, a 280-foot-long boardwalk was installed at Fernald as part of a publically-accessible trail. Fernald site employees will use the boardwalk to facilitate students learning about wetland ecology.

Forty-eight pairs of the American burying beetle were reintroduced to the Fernald site in 2013. USFWS partnered with DOE to develop a cooperative agreement for the beetle's reintroduction at the site. 2014 is the second year of a five-year cooperative agreement with USFWS to reintroduce the federally-endangered species on site.

In spring 2014, 50 four wing saltbush, 50 skunkbush shrubs, and 30 Rocky Mountain juniper trees were planted at the Rocky Flats Site as a habitat enhancement project to increase the vegetation diversity at the site and to provide for additional wildlife habitat. The plants were irrigated during the first growing season to help them get established and their survival will be monitored to evaluate the potential for future plantings.

DOE and community volunteers collaborated on providing local ecotype seed for wildflowers and grasses to support revegetation at the Rocky Flats Site. The Jefferson County Nature Association sponsors seed-picking events to help with this effort. Seed is hand-collected by volunteers on nearby open space properties and from the adjacent Rocky Flats National Wildlife Refuge. Sixteen wildflower "nurseries" were established at the site and interseeded into a delineated "patch" that is not treated with herbicides. Over time, seed from these plants is expected to spread downwind and further increase the forb diversity in the revegetation areas at the site.

Environmental Management/Stakeholder Involvement and Collaboration

LM maintains educational outreach activities at local colleges. An LMS contractor scientist continued an educational exchange partnership with Diné College associated with the Navajo Nation, the oldest tribal college in the United States. The scientist: (1) taught seminars and classes on phytoremediation science, natural and enhanced attenuation pilot studies at the Monument Valley and Shiprock sites, and applying the scientific method to address environmental issues on Native American land; (2) gave a seminar titled "Helping Mother Earth Heal: Natural and Enhanced Attenuation of Soil and Groundwater Contamination at a Uranium Mill Site on Navajo Land" for the Colorado Mesa University seminar series relating to "Natural Resources of the West"; and (3) led a tour for a Colorado Mesa University environmental science class at LM's Grand Junction site on the disposal cell cover field test facilities.

LM has four uranium mill sites on the Navajo Nation (Monument Valley and Tuba City, Arizona; Mexican Hat, Utah; and Shiprock, New Mexico) and works closely with tribal representatives to ensure the sites are well managed and maintained. Navajo technical staff have extensive experience in addressing geotechnical challenges that are similar to those faced by LM. In February 2014, LM and LMS contractor site managers and engineering support, along with Navajo Nation technical staff, visited five reclaimed uranium-mine sites on tribal lands to share expertise in the use of technical approaches for controlling and mitigating erosion at a number of southwestern sites.

In June 2014, the International Atomic Energy Agency (IAEA) sponsored a consultation in Vienna, Austria, as part of the IAEA initiative "Regulatory Supervision of Legacy Sites (RSLS)." LM, which serves as part of the steering group for RSLS, assisted in developing a draft of an IAEA technical document for member state countries to review. The focus of the technical document is on life-cycle oversight of remediation of legacy uranium mills and mines. In July 2014, LM (represented by the LMS Contractor) also participated in a consultancy to prepare training materials, and then assisted in reviewing and drafting the final document for what will eventually be a 5-day training class for regulators in member state countries on reclamation of abandoned uranium mines.

Additional Leased Facilities Activities

In FY 2014, the lease for Building 12A at the Grand Junction office site was terminated and the building was demolished. Over 80 percent of the construction debris was recycled or reused. In its place, to enhance the campus infrastructure and promote healthy lifestyles for employees, a new, open-air pavilion with surrounding sidewalks and xeriscaping was constructed. Compost material from the Mesa County Landfill facility was used to amend the soil and a new drip irrigation system was installed to reduce outdoor water use.

A new entrance vestibule was added to Building 12 at the Grand Junction office site to improve energy efficiency. The large overhang was designed to keep summer sun off the windows and allow winter sun to passively heat the structure.

LMS managed the subcontractors performing the demolition and construction on these Grand Junction office site projects, and worked with the landlord to ensure the improvements met the goals for the site.

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

None.

2.7.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

Transportation/Facility/Renewable Energy Planning

As stated previously, LM has long-term responsibilities at 89 sites located in 28 states and Puerto Rico. Between now and FY 2020, LM will receive approximately 28 more sites for long-term care. In accordance with U.S. Office of Management and Budget (OMB) Memorandum M-12-12, "Promoting Efficient Spending to Support Agency Operations," Section 3, "Real Property," LM will need to utilize existing office locations as much as possible as additional sites are added. If additional office space is needed to handle the future activities and employees, LM will consider the following in the location of any additional office locations: community connectivity, impact/access to public transportation and community, building orientation, onsite and offsite renewable energy sources, site hydrology, existing watersheds, local ecosystems, incorporation and maintenance of natural habitat, light trespass, air quality, reducing heat island effect, reducing waste, and connection to community sidewalks, bike trails, and hiking trails.

Principles for Sustainable Federal Location Decision

As required by the DOE Real Estate Desk Guide, a Preliminary Real Estate Plan (PREP) must be prepared whenever there is a requirement to acquire additional realty interest. As referenced in the DOE Real Estate Desk Guide, EO 13514 requirements and the principles for sustainable federal location decisions will include (1) consideration of sustainable locations from a regional perspective and (2) consulting with local officials and considering their recommendation when preparing the PREP for any future expansions or acquisition of office space.

Watershed and Ecosystem Management

LM continues to work with local counties and the U.S. Bureau of Land Management offices to control noxious weeds along access roads and on selected LM sites.

Environmental Management/Stakeholder Involvement and Collaboration

LM continues to maintain an extensive distribution list of local stakeholders and elected officials for each site. Stakeholders are updated or contacted as site activities warrant. All stakeholders are

able to access public websites for copies of annual or other reports. The Rocky Flats, Fernald, Mound, and Weldon Spring sites continue to engage stakeholder groups in routinely scheduled meetings.

LM continues to coordinate and attend quarterly meetings with representatives of the Navajo Nation and Hopi Tribe. The Shiprock site; the Monument Valley site; the Mexican Hat site and the Tuba City site are on or near Navajo or Hopi reservations. The quarterly meetings are used to provide the status of site activities and to jointly address technical challenges and opportunities to sustain and improve long-term surveillance and maintenance at these sites.

LM continues to coordinate and work with the Northern Arapaho and Eastern Shoshone Tribes. The Riverton, Wyoming, site is located on the Wind River Indian Reservation, which is owned and managed jointly by the two Tribes. Meetings and cooperative agreements are used to provide status of site activities, to address technical challenges at the site, and to work cooperatively in protecting human health and the environment.

LM provides a financial assistance grant to the Aleutian Pribilof Islands Association Inc. (APIA). APIA is the federally recognized tribal organization of the Aleut people in Alaska and is an important component of the LM mission at Amchitka Island, Alaska. APIA represents the interests of the Aleuts and assists LM with communications with the Aleut people and the Alaska Department of Environmental Protection. APIA participates in developing work scope related to the LM mission on Amchitka and participates in regular planning meetings.

LM is collaborating and sharing costs with the University of Arizona on two graduate research projects that support the LM Applied Studies and Technology program. An M.S. student is investigating the long-term value of revegetation and grazing management practices at the Tuba City site. His project supports an LM goal to improve land and ecosystem management. A Ph.D. student is investigating the long-term resilience of disposal cell covers considering changes in regional and local climate. Her project supports goals to maintain the long-term protectiveness of LM remedies to comply with Executive and DOE Orders with respect to climate change impacts and adaptation. The students' graduate advisor is a University of Arizona extension specialist to Native American communities. Both students are funded in part through the Alfred P. Sloan Foundation Indigenous Graduate Partnership. An LMS contractor scientist serves on the students' graduate committees and supervises the projects.

LM maintains educational outreach activities at local colleges. Several LMS contractor scientists participate.

As funding for the IAEA effort to draft four training modules extends through 2015, it is likely that LM will support IAEA in developing the training material further during visits to some of the specific countries requesting this type of support. LM is working on a technical document that will include approaches to safety assessments and environmental impact assessments that would be appropriate for legacy sites (i.e., abandoned and contaminated sites) as opposed to licensed facilities that are to undergo decontamination and decommissioning. In addition, LM has been developing an approach of "phased remediation" of legacy sites where there are insufficient resources to complete the remediation of a site at one time. This work will continue in 2015, which will be the last year of Phase I of the RSLS Initiative.

LM continues to serve as part of the steering group for the IAEA RSLS Initiative. The focus on the first phase of RSLS is on uranium legacy sites such as abandoned mines and mills because the vast majority of member state countries participating in the Initiative have such sites. LM leads Working Group 2 that is addressing conducting safety assessments, environmental impact assessments, and post-closure monitoring and maintenance at uranium legacy sites. In addition, Work Group 2 is addressing "phased remediation" of legacy sites where there are insufficient resources to complete the remediation of a site at one time. Another objective of RSLS is to prevent active uranium mines and mills from becoming future uranium legacy sites, particularly since uranium production is occurring in some countries that were not a source of uranium during the Cold War. A draft of the technical document being written to summarize the results of RSLS Phase I will be circulated for review at the annual technical meeting of RSLS scheduled for early CY 2015.

LM has agreed to host a visit to Grand Junction by IAEA member countries in FY 2015 and to conduct tours of LM sites.

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

LM will plan to meet this goal, as activities warrant.

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

None.

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

- Continue environmental management, stakeholder involvement and collaboration, and watershed and ecosystem management as part of Site Operation activities at Legacy Sites;
- Continue to hold quarterly meetings with the Navajo Nation and Hopi Tribe.
- Continue to hold meetings with the Northern Arapaho and Eastern Shoshone Tribes and the Aleutian Pribilof Islands Association Inc. as needed.
- Continue to encourage public participation and offer educational programs at LM sites with visitors and interpretive centers.
- Strive to adhere to the "Freeze the Footprint" guidelines by adhering to standards for office size and/or configuration, reconfiguring current office space, considering the sharing of office space, and housing employees in office space that costs less to maintain.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

None.

3 Fleet Management

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

Under the DOE 2014 SSPP, DOE is committed to a 10 percent annual increase in fleet alternative fuel use by FY 2015 relative to a FY 2005 baseline (the 2014 target is a 136 percent cumulative increase in usage compared to 2005).

3.1.1 Performance Status

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

Status is tracked in the FAST database (Scope 1 GHG Mobile Emissions data, in terms of CO_2, and located and summarized in CEDR Tab 1.2a, "Performance Summary," and CEDR Tab 1.2b, "GHG Emissions Summary." E85 fuel stations are tracked using the alternate fuel data center at DOE's Energy Efficiency and Renewable Energy website.

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

None.

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

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

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

LM believes that the FAST data for the E85 baseline is an overestimate when compared to LM tracking data (see Attachment F).

3.1.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM is currently tracking and will continue to track the locations of E85 stations relative to the work being performed as part of LM's mission. See Attachment C, "LM Fleet Management Plan."

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

The LM annual target has been met and LM has exceeded this goal.

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

None.

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

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

- Submit needed AFV waivers for 2015 where E85 fueling stations are unavailable, and coordinate appeals for waivers as needed.
- Continue tracking E85 fuel use by each non-waivered vehicle in 2015 for reporting purposes.
- Continue to monitor DOE's Energy Efficiency and Renewable Energy website to determine E85 fuel availability by location.
- Continue to place maps and station listings showing E85 fuel stations in all E85-fuel-capable vehicle logbooks at the Grand Junction office site.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

3.2 Reduce Departmental Fleet Petroleum Use by 2 Percent Annually

The DOE 2013 SSPP goal requires a 2 percent annual reduction in fleet petroleum consumption every year from FY 2005 through FY 2020 relative to an FY 2005 baseline (2014 target: 18 percent cumulative since 2005).

3.2.1 Performance Status

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

Performance related to this goal is reported in the FAST database.

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

LM's mission is to manage post-closure responsibilities and ensure the future protection of human health and the environment. As more sites move into post-closure and legacy management, LM's number of sites and associated use of vehicles will continue to increase, making it difficult for LM to meet the reduction goal. Additionally, the lack of alternative fueling infrastructure near these sites makes it increasingly difficult to address reduction of conventional fuels.

LM's current strategy is to replace all light-duty vehicles with AFVs if reasonable at the time of replacement. The availability of E85 vehicles will allow for more opportunities to use E85 fuel and reduce the use of petroleum fuel. However, some locations do not have E85 fueling infrastructures available to accommodate an E85 fueled vehicle. For these locations, only petroleum-using vehicles are recommended to be purchased in attempts to save additional costs incurred by the government for fueling capabilities that are not available at the locations.

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

LM's petroleum fuel use in 2014 indicates a 6.2 percent decrease in consumption compared to 2013 and a 22.0 percent decrease in consumption since the baseline year of 2005. To determine the effects of LM's expanding mission, LM calculates normalized values for fuel use based on the number of sites supported. For the normalized evaluation, the fuel consumption, in gallons, is divided by the number of LM sites in the current year. Based on the normalized values, LM's petroleum fuel use in 2014 indicates a 41.9 percent decrease in consumption since the baseline year of 2005. A comparison of the petroleum fuel consumption changes using both data sets are shown in Table 4.

Table 4. LM Petroleum Fuel Use

Data Set	Baseline–2005 (gallons)	2013 (gallons)	2014 (gallons)	Annual % Change	Total % Change
Using LM Baseline[a]	31,488	26,181	24,557.36	-6.2%	-22.0%
Normalization of data to reflect increase of mission					
Number of LM Sites	67	90	90	0%	34.3%
Fuel Use/Site	470.0	296.7	272.9	-6.2%	-41.9%

Notes:

[a] The CEDR reported LM 2005 baseline values as 27,213 gallons of conventional petroleum and 4,275 gallons of E85 fuel. This occurred because, for all E85-capable vehicles in 2005, 100 percent of fuel was reported as E85 fuel. However, E85 fueling infrastructure was not in place in 2005, and all reported E85 was actually conventional petroleum fuel. The new correct 2005 baseline amount for conventional petroleum fuel consumption is 31,488 (i.e., 27,213 + 4,275).

Methods of reducing conventional fuel use while including newly acquired sites as LM's support scope increases include: acquiring more E85-capable vehicles, tracking and updating E85 station locations for vehicle users, and promoting ride-sharing and trip consolidation whenever possible.

LM has established videoconferencing capabilities at its nine staffed sites around the country. In addition, virtual-presence meeting software is being used more frequently to reduce travel.

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

It should be noted that, in accordance with the CEDR Technical Support Document, the CEDR reports these changes in terms of gasoline gallon equivalent (GGE) units instead of natural units (NUs). The percent changes and quantities of fuel will not appear to match correctly with this report.

LM has identified more accurate 2005 baseline value for conventional petroleum usage, in regards to this goal. Originally, for all E85-capable vehicles in 2005, 100 percent of fuel consumed was reported as E85 fuel. Accordingly, the CEDR previously reported the 2005 baseline for conventional petroleum as 27,213 gallons and for E85 as 4,275 gallons, and those values resulted in a calculated 9.8 percent decrease in conventional petroleum consumption for 2014 compared to the 2005 baseline. However, in reality, in 2005 an E85 fueling infrastructure was not in place and all reported E85 fuel consumed was actually conventional petroleum fuel. This fact requires a new 2005 baseline value of 31,488 gallons of conventional petroleum fuel consumed (see Table 4, and that new baseline results in a calculated 22.0 percent decrease in conventional petroleum fuel consumption for 2014 compared to the 2005 baseline.

3.2.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

See Attachment C, "LM Fleet Management Plan."

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

LM met the 2014 interim target but does not expect to meet this goal in the future because of continued growth in the number of LM sites. Due to increasing growth in the number of LM sites that must be supported by the LM Fleet, LM expects to meet this goal only through the use of normalized figures.

If the program grows as expected, the number of LM sites will grow to approximately 126 by 2020. It will be a major challenge for LM to decrease fleet petroleum consumption by 2 percent annually through 2020 compared to the 2005 baseline while maintaining the site support efforts and accomplishing the LM mission. In 2005, LM had significantly fewer sites and vehicles than at the end of 2014.

Additionally, it will be unlikely to meet this goal due to an increase in number of vehicles that are waived from the requirement to fuel with E85 based on the EPAct 2005 Section 701 waiver process. As stated in the EPAct 2005 Section 701, dual-fueled vehicles may be waived from the requirement of fueling with E85 alternative fuels if the alternative fueling station is located

greater than 5 miles radius or greater than 15 minutes travel time from the garaging location or if the cost per gallon of E85 is more expensive than gasoline. Thirteen of LM's 24 dual-fuel-capable vehicles were approved for waivers from the requirement to fuel with E85 fuel based on these requirements.

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

None.

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

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

- Continue to maintain a list of vehicles, monitor the monthly fuel consumption, monitor vehicle and fuel type, and take appropriate action to meet sustainability goals for vehicle and fuel use.
- Increase the overall fuel economy of the fleet by continually working with GSA to acquire smaller vehicles or other advanced-technology vehicles.
- Identify the most fuel-efficient vehicle for a given task by taking into account miles driven, fuel used, vehicle use, and road types such as off-road conditions.
- Continue to (1) encourage the use of videoconferencing and virtual-presence meeting software capabilities at LM's eight major sites around the country to reduce travel and (2) reduce miles through methods such as trip consolidation.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

3.3 AFV Purchases

The DOE SSPP goals for new vehicle acquisitions include the following: (1) by 2015, of all vehicles purchased, at least 75 percent will be AFVs, and (2) by 2015, 100 percent of light-duty vehicles purchased shall be AFVs.

3.3.1 Performance Status

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

Performance related to these goals is reported in the FAST database.

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

None.

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

LM's goal is to replace retired light-duty vehicles with AFVs at least 75 percent of the time, which is consistent with the DOE SSPP goal that 75 percent of light-duty vehicle purchases must consist of AFVs by 2015. LM's current strategy, which is to acquire an AFV when any fleet vehicle needs to be replaced, exceeds the EPAct 1992 requirement that 75 percent of retired vehicles be replaced with AFVs. Currently LM's light-duty fleet is 96.2 percent AFVs, which exceeds the EPAct 1992 requirement for AFV acquisitions.

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

None.

3.3.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM's current strategy is to replace 100 percent of all light-duty vehicles with AFVs, when it doesn't negatively impact the mission, at the time of replacement. Some locations do not have E85 fueling infrastructures available to accommodate an E85 fueled vehicle. As such, it would not be cost-effective for LM to lease E85 vehicles at an added incurred monthly cost to the government. See LM Fleet Management Plan (Attachment C).

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

LM has already met this goal.

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

None.

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

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

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

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

4 Water Use Efficiency and Management

According to the DOE SSPP, LM will reduce water consumption at goal subject sites for the following areas:

- Potable water intensity by at least 26 percent by FY 2020 relative to the FY 2007 baseline.
- Non-potable, industrial, landscaping, and agricultural (ILA), fresh water by at least 20 percent by FY 2020 relative to the FY 2010 baseline.

4.1 Potable Water Intensity Reduction Goal

LM must reduce potable water intensity use 26 percent by 2020 compared to a 2007 baseline.

4.1.1 Performance Status

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

LM potable water intensity performance is in CEDR Tab 3.1, "Energy & Water LM," which contains updated quarterly 2014 data and associated costs, in the Energy Star Portfolio Manager, and in Table 5 below. The data includes 2014 quarterly, potable and ILA non-potable fresh water usage amounts and costs. Table 5 illustrates square footages associated with water use and energy use, respectively, and the results when calculating annual, water use intensity (WUI) using either one.

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

None

Table 5. LM Combined-Sites Water Use Since 2007

Fiscal Year	GSF[a]	Water Use (Gallons)		Potable-Water WUI (gallons/GSF)	Potable-Water WUI Percent Change	Non-potable Fresh Water ILA Use Percent Change (gallons)
		Potable Water	Non-potable Fresh Water ILA			
2007	10,992	1,497,098	NA	136.20	NA – Baseline year	**NA**
2008	11,712	1,070,768	NA	91.42	32.9% reduction	**NA**
2009	22,512	549,462	NA[c]	24.41	82.1% reduction	**NA**
2010	22,464	80,358	503,336[d]	3.58	97.3% reduction	**NA—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**
2014 combined-sites potable-water WUI = (381,952 ÷ 38,422) = 9.94						
2014 combined-sites percent potable-water WUI Reduction: **= [(2007 WUI – 2014 WUI) ÷ 2007 WUI] × 100 percent** **= [(136.20 – 9.94) ÷ 136.20] × 100 percent** **= 92.7 percent reduction**						
2014 combined-sites percent non-potable fresh water ILA Reduction: **= [(2010 ILA – 2014 ILA) ÷ 2010 ILA] × 100 percent** **= [(503,336 – 458,530) ÷ 503,336] × 100 percent** **= 8.9 percent reduction**						

Notes:

[a] See Table 6 for WUI comparison when using square footage associated with water and energy use, respectively.

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

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

[d] Non-potable fresh water used for ILA was defined with its own goal, for which 2010 is the baseline year.

Abbreviations:

NA = not available

Table 6. Water Use Intensity Comparison Using Square Footage Associated with Water and Energy Use

Fiscal Year	GSF (water)	GSF (energy)	Potable Water Use (gallons)	Potable-Water WUI (gallons/GSF)		Potable-Water WUI Percent Change	
				Using Water GSF	Using Energy GSF	Using Water GSF	Using Energy GSF
2007	10,992	26,374	1,497,098	136.20	56.76	NA—Baseline year	NA—Baseline year
2014	**38,422**	**37,400**	**381,952**	**9.94**	**10.21**	**92.7% reduction**	**82.0% reduction**

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

In 2014 LM tracked potable water use at all LM goal subject sites. Table 5 shows the water use performance of LM goal subject sites since 2007. As shown in Table 6, by 2014 LM reduced potable-water WUI by 92.7 percent compared to the baseline year of 2007, exceeding the minimum water intensity goal of a 14 percent reduction by the end of 2014. (See Attachment F, "Reporting Inconsistencies Between LM Data and Provided Data," for square footage values used to calculate potable-water WUI.) The calculated WUI reduction conflicts with the reported percentage reduction in the CEDR. See Table 5 and footnote "a" for an explanation.

Although LM achieved its WUI reduction goal for 2014, water use at the Grand Junction disposal site was abnormally high due to increased site activities, including the disposal of Building 12A (Grand Junction Office) demolition materials. LM determined it was more cost-effective to use potable versus non-potable water for site activities. In addition, potable water use at the Fernald Preserve was abnormally high during the first quarter of FY 2014 because Fernald staff filled the "skillet" pond which supports the Visitors Center's ground source heat exchange system.

LM Water Conservation Team staff audited the Grand Junction Disposal and Rifle sites in 2014; the audits included the evaluating meters, as well as leak detection. With the exception of the Old Rifle Processing site, LM uses standard water meters at all Goal Metrics sites for measuring potable water use. The Rifle site does not have a meter because it would not improve the accuracy of the site's use data, which staff tracks by volume via potable water deliveries. LM uses the Rifle site intermittently; hence LM only uses a small amount of water at the site.

Weldon Spring Interpretive Center staff installed four, metered faucets (timed shutoff) in April 2014. These faucets decrease the water flow by approximately 50 percent.

LM maintained and followed a water management plan found in the LMS *Environmental Management System Programs Manual*, Section 3.0, "Water Conservation."

LM evaluated ways to reuse and recycle water.

LM considers ways it can reduce, reuse, and/or recycle potable and non-potable water with project-planning tools (Project Activity Evaluation, Statement of Work, etc.).

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

The gross square footage LM used to determine potable water use intensity values is different from the gross square footage provided in the FIMS snapshot, because water use does not occur in all the included FIMS square footage (see Attachment F). Therefore, the potable-water WUI values in the CEDR and this SSP are not the same. The values reported in Table 5 are the correct values for LM's potable-water WUI. Table 6 illustrates WUI calculations when using the square footages associated with energy and water, respectively.

4.1.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM will continue to track and monitor potable water use for 2015 and beyond to identify areas for water efficiency improvements.

LM expects to have moderate-to-high potable water use in 2015. The potable water will be used for a planned installation and operation of an irrigation system at the Grand Junction disposal site; and the potential need of irrigation of restored area/biowetland and filling of the "skillet" pond that houses the ground source heat exchange pump at the Fernald site due to the possibility of lower-than-normal annual precipitation.

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

LM met the annual interim target and is expected to exceed this goal.

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

None.

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

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

- Continue to investigate ways to reuse and recycle water.
- The LM Water Conservation team rotates audited sites so it will audit all sites at least once every 4 years as per EISA Section 432. LM will conduct a water audit in 2015 at the Tuba City site.
- Continue to reduce water use and to implement water efficiency improvements identified in past audits.
- Maintain, update as needed, and follow a water management plan described in the LMS *Environmental Management System Sustainability Teams Manual*, Section 4.0, "Water Conservation."

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

4.2 Non-Potable Fresh Water ILA Use Reduction Goal

LM is required to reduce consumption of non-potable ILA water by 20 percent by 2020 compared to the 2010 baseline.

4.2.1 Performance Status

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

Performance related to this goal is reported in CEDR Tab 3.1, "Energy & Water LM."

LM updated quarterly 2014 data in Tab 3.1 of the CEDR. The data includes updated usage amounts and costs associated with each quarter of 2014 for both potable and ILA non-potable fresh water. For more information, see Table 5.

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

None.

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

LM tracked 2014 non-potable freshwater use data for ILA purposes at all LM goal subject sites. As shown in 2014 LM reduced ILA water use by 8.9 percent compared to the baseline year of 2010, which exceeds the required interim ILA reduction of 8 percent by the end of 2014.

Although LM achieved the required water use reduction goal during 2014, it is important to note that use at the Monticello site was atypically high due to use of water for dust suppression on site access roads supporting the new remediation project.

LM followed its water management plan described in the LMS *Environmental Management System Programs Manual*, Section 3.0, "Water Conservation."

LM identified budgeting needs for 2016 through 2020.

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

None.

4.2.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM will continue to track and monitor non-potable ILA water use to identify areas for water use efficiency improvements.

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

LM met the annual interim target and expects to exceed this goal by the goal year of FY 2020.

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

None.

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

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

- Continue to implement non-potable fresh water efficiency improvements as opportunities and funding become available.
- Continue to use low-water-use landscaping technologies and practices. Investigate ways to reuse and recycle water.
- Continue to audit water use at goal subject sites in accordance with EISA Section 432. LM will rotate site audits to ensure that it audits each site every 4 years.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

4.3 Storm Water Management

EISA Section 438 stipulates that "The sponsor of any development or redevelopment project involving a Federal facility with a footprint that exceeds 5,000 square feet shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow."

4.3.1 Performance Status

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

None.

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

None.

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

A construction project that disturbed approximately 5 acres of land was initiated at the LM site in Monticello, Utah, during FY 2014 to optimize remediation of contaminated groundwater. A storm-water pollution prevention plan was developed and storm-water controls were installed and maintained to properly manage storm-water runoff and protect regulated waters during the project.

LM reports and promotes its Section 438 performance and its Section 438 best management practice in the LMS contractor *Quarterly Performance Assurance Report*.

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

None.

4.3.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM is not planning any Section 438 activities in 2015. If that changes, LM would consider EISA Section 438 requirements in (qualifying) project(s)/ proposal(s).

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

LM will pursue attainment of this goal if larger construction activities are identified.

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

None.

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

LM will pursue the following goals and milestones:

- Revegetation of disturbed areas at the Monticello site is scheduled to begin during 2015.
- Place the EISA Section 438 requirements into design procedures for development or redevelopment projects that exceed 5,000 GSF.
- Ensure any new or upgraded roofs will be green and/or use rainwater cisterns.
- Consider utilizing concrete paving blocks that are designed to infiltrate runoff for new parking lots.
- Consider installing bioswales adjacent to asphalt roadways and other hard surfaces to facilitate infiltration when future upgrades are planned.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

5 Pollution Prevention and Waste Minimization

LM has established the following goals that are consistent with the pollution prevention goals outlined in the DOE SSPP:

- Achieve 50 percent diversion of nonhazardous municipal solid waste through recycling/reuse by 2015.
- Achieve 50 percent diversion of construction and demolition debris through recycling/reuse by 2015.

5.1.1 Performance Status

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

LM maintains Excel spreadsheet inventories for recycled materials, chemicals, universal wastes, and solid, hazardous, and radioactive wastes. These tracking spreadsheets are maintained and updated twice a year with data compiled by the environmental compliance points of contact for each LM site. Performance related to these source reduction goals is reported in CEDR Tab 9.1a,

"Offsite Municipal Solid Waste Landfill," and CEDR Tab 9.1b, "Municipal Solid Waste and Construction Debris Diversion."

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

A significant factor to goal performance is the number of employees. LM employee numbers were higher in 2014 than in 2013.

LM's job-planning process takes into account minimizing the generation of waste and pollutants through source reduction. LM's contracts and subcontracts specifically call for waste minimization and the use of less-toxic and more environmentally friendly products and chemicals. Websites to locate these materials and supplies are provided in most requests for proposals and statements of work. Assessments are conducted periodically to ensure that subcontractors are addressing these requirements.

To facilitate pollution and waste prevention in the job planning process, the WMP2 team developed *Guidance for Implementing Solid Waste and Construction Debris Diversion Strategies.* This document provides project managers with specific recycling and waste reduction measures to consider in planning and implementing their projects. This guidance was distributed in an employee update and is available on the Environmental Compliance webpage.

LM reviews all chemical procurement requests to ensure that chemicals regulated under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) are tracked, reduced, or undergo a sustainable-alternatives review. Acceptable alternative chemicals are approved through the procurement and job-planning processes.

Integrated pest management (IPM) is the preferred control method when it is appropriate to the site conditions. LM uses a variety of biological, cultural, and mechanical methods to control state-listed noxious weeds. For example, LM has used biological controls such as releasing stem-boring weevils that target noxious weeds. LM uses cultural methods such as reseeding an area with a type of native vegetation that can outcompete the weeds and then coordinating treatment efforts with adjacent landowners to ensure that all landowners in the watershed are working together to control the noxious weeds. Finally, LM regularly uses mechanical methods such as hand-pulling or mowing. When IPM is not appropriate to the site conditions, less toxic or nontoxic chemical applications are evaluated for effectiveness and cost and used as appropriate. Recently a former herbicide of choice was replaced with a new herbicide that is very effective and much better for the environment. Efforts were made to encourage subcontractors to make the change as well.

LM reviews personal property procedures at least once every two years to ensure alignment with all guidelines in DOE Order 580.1A, Federal Acquisition Regulation policies and procedures, the CFR, and the LM *Personal Property Management Manual* (LMS/POL/S04336). Assessment Management support personnel conduct annual inventories of any high-risk personal property (HRPP) and sensitive items.

Most LM sites do not have formal composting programs. LM sites do not have cafeterias and staffed sites are often leased buildings that are not able to accommodate onsite composting

facilities. Sites with large amounts of biological debris are able to reuse or rework the debris back into the natural surroundings. Some sites have volunteers who bring small amounts of waste to an offsite composting area.

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

LM was able to achieve 60 percent solid waste diversion from landfills through the use of source reduction and recycling strategies. LM was also successful in diverting 82 percent of construction and demolition debris through reuse and recycling measures.

The Durango site personnel recently demonstrated successful site material diversion and reuse. The permeable reactive barrier treatment system associated with the Durango disposal cell toe-drain was removed in 2010. At that time, materials from the perimeter fence were stockpiled along the outside of the evaporation pond fence to be recycled at a later time. In September 2014, activities associated with removal of a shed and excavation of the toe-drain valves required a subcontractor with a trailer to be on site. The trailer was used to transport the surplus materials to a recycler. Several recycling locations for metal were identified; however, no recycling locations in Durango would accept the treated wooden fence posts. Because they would accept both the metal and wood materials, all of the surplus materials were donated to the Durango Habitat for Humanity reuse center. The materials donated to Habitat for Humanity included approximately 150 linear feet of 8-foot chain link fencing and approximately 20, 6 to 8 inch diameter, 12-foot long treated wooden fence posts. These materials were sold within one business day.

LM maintain an ecosystem improvement log that includes the results of weed control and management activities.

During the summer, the Fernald Site used approximately eighty bales of hay, harvested from the site, as a treatment system to help eradicate reed canary grass within one of the wetland areas. The reed canary grass was sprayed with an herbicide to kill the standing stem. The area was then mowed to lay all the grasses down and the hay was spread over the area to attempt to shade out the reed canary grass. While there was not complete shading out of vegetation beneath the layers, the project has shown some success as an innovative way to reuse site materials for pest grass management.

A PPOA was initiated for the Building 12A demolition project at the Grand Junction office site. This assessment is tracking the use and effectiveness of the draft guidance. To date, 1,496 pounds of nonhazardous solid waste (appliances, metals, and doors and fixtures) have been reused or recycled; 828 tons of construction debris was recycled, and 727.53 pounds of hazardous waste were recycled. This project achieved 81.72 percent non-hazardous waste diversion and 81.70 percent nonhazardous construction debris diversion.

LM submitted reports for Section 312 of EPCRA for three sites. No EPCRA Section 313 reports were required. An LM-wide battery inventory was completed and is being maintained to ensure that sites are meeting EPCRA requirements for reporting sulfuric acid and lead quantities, if applicable. EPCRA reports are tracked through a monthly update to the regulatory compliance schedule. Procurement tracking is used to help compile data for EPCRA reporting. In addition, a chemical inventory program is in place to track all chemicals at each LM site and ensure that

significant changes in chemical quantity or toxicity are evaluated for applicable EPCRA reporting requirements.

LM continued to improve chemical-management activities by maintaining accurate inventory management, identifying and sharing excess chemicals, and planning chemical purchases based on need. Chemical inventories are updated twice a year, and each site maintains an accurate Material Safety Data Sheets logbook. Examples of ongoing chemical reduction and minimization efforts included the following:

- The chemist at the Environmental Sciences Laboratory (ESL) (Grand Junction office site) continually checks and reuses expired stock liquid standards for noncritical analyses.
- All sites equipped with a laboratory continue to share reagent-grade sample preservatives with the LMS contractor Environmental Monitoring group.
- The ESL also shares chemicals and gases with the Environmental Remediation Sciences Program laboratory at the Old Rifle site.

LM supported efforts to meet the 50 percent diversion goals for solid waste and construction debris by means of an awareness campaign during the 1st quarter of 2014. Awareness communications included an *ECHOutlook* newsletter article titled "Every Little Bit Counts" highlighting waste minimization and reporting efforts. Additionally, a seven-week employee messaging campaign was conducted between Earth Day April 22 and World Environment Day, June 5. This awareness campaign provided messages related to waste minimization, pollution prevention, and climate change adaptation. Topics included an invitation to participate in the Federal Bike to Work Challenge, using and recycling compact fluorescent light bulbs, reducing voluntary car idling, the wonders of wetlands, understanding climate change and climate change resilience. The campaign concluded with a documentary presentation of *Chasing Ice*.

Based on EO 13514, LM has a standard electronics stewardship practice of programming all printer drivers and multifunction devices to the default settings of duplex printing (if the machine has that capability) and black-and-white printing. Additional efforts have included implementing the secure print option on all LM multi-function devices. This feature allows the user to assign a code to a print request that then requires that code to be entered at the output device before the hardcopy is produced. These actions reduce the amount of printing paper used, as well as reduce some of the associated printing supplies and contribute to the reduction of unwanted printouts and need for office paper recycling.

LM's sustainable acquisition program was developed in accordance with EO 13423, EO 13514, and DOE Order 436.1 in order to meet specific purchasing goals such as the purchase of 30 percent post-consumer fiber paper. LM issued *Management Guidelines for Green Products* and a sustainable acquisition coding program with specific Y-codes and cost elements for recycled paper purchasing. LM reported 100 percent achievement in purchase paper that has at least 30 percent recycled content in the 2013 Pollution Prevention Tracking and Reporting System, and LM has maintained that achievement for 2014.

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

LM disposal sites and onsite landfills do not fall within the definitions and criteria in the CEDR Technical Support Document guidance for onsite solid waste disposal. Therefore there are no data to report for onsite waste disposal in CEDR Tab 9.1a, "Onsite Municipal Solid Waste Landfill."

5.1.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM employee numbers are expected to be higher in 2015 than in 2014. This expansion is expected to increase waste disposal and treatment numbers.

The WMP2 and Environmental Compliance teams will help project managers incorporate diversion guidance considerations into their planning. The guidance will continue to be refined as needed.

LM is assessing opportunities to improve existing recycling efforts at staffed office sites. Considerations are being made for purchase and installation of new recycling containers at the Grand Junction office site.

LM is in the process of assessing the effectiveness of current composting efforts at some sites and the feasibility of a compostable material collection effort for third-party composting where full-scale onsite composting is not feasible.

The *Guidance for Implementing Solid Waste and Construction Debris Diversion Strategies* will be further refined based on the results of the pilot efforts documented through a PPOA currently underway for the demolition of Building 12A at the Grand Junction office site.

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

LM is expected to meet this goal.

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

None.

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

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

- Test and evaluate the Guidance for Implementing Solid Waste and Construction Debris Diversion Strategies for at least two new proposed projects.
- Incorporate diversion guidance references into manuals for other groups.
- Consider a proposal for purchasing new recycling containers for the Grand Junction office site.
- Increase composting efforts where feasible, and discontinue it where efforts are not effective.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

6 Sustainable Acquisition

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

LM has established the following goals to support sustainable acquisition:

- Ensure that 95 percent of new contract actions, including task orders and delivery orders under new and existing contracts, require the supply or use of products and services that are energy efficient (Energy Star or FEMP-designated), water-efficient, biobased, environmentally preferable (including Electronic Product Environmental Assessment Tool [EPEAT]-registered products), or non-ozone-depleting; contain recycled content; or are nontoxic or use less-toxic alternatives.
- At LM sites, make 95 percent of new LM contract actions for products and services, including task/release and blanket orders but excluding all credit card purchases, environmentally preferable in accordance with EO 13514 and as subject to certain qualifications.

6.1.1 Performance Status

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

Using data in the JAMIS (Job Cost Accounting Management Information System) data warehouse, the LMS Contractor Enterprise Architecture department has created electronic reports that provide information for products and services used by the LMS contractor.

Information for new contract actions is collected manually, and all actions are reviewed. In FY 2014, 100 percent of new contract actions, including task orders and delivery orders under new and existing contracts, included requirements for products and services (1) to be energy efficient (Energy Star or FEMP-designated), water efficient, biobased, environmentally preferable (including EPEAT-registered products), non-ozone-depleting, and nontoxic or less toxic, and (2) to contain recycled content. Sustainable Acquisition data is located in CEDR Tab 2.2, "Sustainable Acquisition," and electronic data will be entered in the FedCenter using the GreenBuy award submittal process when open for entry. See Table 7 for EPEAT purchase information.

Table 7. 2014 EPEAT Purchases

Electronics	Total Number Acquired	EPEAT Acquired				EPEAT Compliance
		Bronze	Silver	Gold	Silver or Gold	
Desktop Computers	32	0	0	32	32	100%
LCD Monitors	42	0	0	42	42	100%
Notebook Computers	101	1	0	100	100	99%
Copiers	2	0	2	0	2	100%
Printers	3	0	1	1	2	67%
Multifunction Devices	8	0	1	6	7	88%
Televisions	2	0	2	0	2	100%
All Eligible Electronics	**190**	**1**	**6**	**181**	**187**	**98%**

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

None.

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

The bulk data for products and services is included in the LMS contractor *Quarterly Performance Assurance Report*.

Ninety-nine percent of products and services purchased during 2014 were sustainable (where recycled and biobased products are identified as available by the U.S. Department of Agriculture and the U.S. Environmental Protection Agency).

All new solicitations and contracts contain requirements for products and services (1) to be energy efficient (Energy Star or FEMP-designated), water efficient, biobased, environmentally preferable (including EPEAT-registered products), non-ozone-depleting, and nontoxic or less toxic, and (2) to contain recycled content. In 2014, 100 percent of new contract actions, including task orders and delivery orders under new and existing contracts, met these requirements as reported on the CEDR.

The current LM affirmative procurement plans, policies, and programs ensure that all federally mandated designated products and services are included in all relevant acquisitions.

The current procurement process allows for review by a subject matter expert to identify applicable sustainable acquisition requirements.

The LMS contractor Sustainable Acquisition Cost Element list was updated to add new products and services on June 11, 2014.

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

None. Sustainable acquisition has no baselines.

6.1.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

Sustainable Acquisition team personnel will continue to attend the DOE bimonthly sustainable acquisition teleconference/webinar to stay abreast of what other DOE programs and contractors are doing to purchase sustainable products and services. LM is currently meeting sustainable acquisition goals and plans to continue meeting these goals.

The LMS contractor Terms and Conditions for all commodities and services will continue to include the goal of 95 percent sustainable products.

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

LM is expected to meet this goal.

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

None.

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

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

- Track compliance with the goal of purchasing 95 percent sustainable products and services (includes tracking for the performance assurance summary and LM’s annual reporting on FedCenter and CEDR Tab 2.2).

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

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

7 Electronics Stewardship and Data Centers

7.1 Data Centers

LM has established goals that are consistent with the data center goals outlined in the DOE SSPP. LM is metering all data centers to measure monthly power utilization effectiveness (PUE) in order to achieve a consistent PUE ratio of 1.4 by FY 2015.

7.1.1 Performance Status

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

LM's data center performance is in CEDR Tab 5.1, "Data Centers."

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

Separate metering system monitors power use in real-time and has been instrumental in reducing power usage at all locations.

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

Installing and configuring separate metering at all sites was challenging. Separate equipment was purchased for the server room at the LMBC in Morgantown and Grand Junction Office sites. Configuring the equipment was more challenging than expected, and required unanticipated, staff time for research and familiarization.

LM continues to manage all excess or surplus electronic products responsibly by:

- Redeploying equipment to other employees if it meets LM requirements.
- Donating equipment to nonprofit organizations, such as schools and community groups, if it does not meet LM requirements.
- Recycling computers and other devices with no redeemable value.

Virtually 100 percent of LM computer system purchases are EPEAT gold. Compelling business and technical requirements create the need for lower EPEAT-grade systems in fewer than 1 percent of purchases.

LM currently maintains two standard data centers and three smaller data centers, as defined by the Federal Data Center Consolidation Initiative (FDCCI) at satellite offices. Generally, sustainability activity in the data centers relevant to LM's Electronics Stewardship team is at FDCCI's request.

LM also manages 693 workstations (desktops and laptops) as well as 74 network-managed printers.

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

None.

7.1.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM has implemented the option for coded printer output on all LM multi-function devices. This feature provides users the capability to input a 4- to 8-digit code when sending a print request. The selected code must then be entered at the networked multi-function device before the hardcopy is produced. There is consideration to make this feature a requirement for all multi-function device printing. Benefits are as follows:

- Decrease duplicate output due to print jobs being picked up accidentally by someone other than the author.
- Elimination of "personal" printers previously required for printing of sensitive data.
- A general reduction in paper and electricity consumption.

In concert with the FDCCI, LM has established the following goals to perform rigorous electronics stewardship and data center management:

- Whenever possible, reduce computing energy consumption.
- Increase or maintain the percentage of electronic assets that are disposed of through sound disposition practices.
- Ensure that 95 percent of newly purchased computer systems are EPEAT Silver or Gold.
- Reduce the number of computers in circulation by assigning a single system per user, eliminating duplicate desktop and laptop systems.

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

LM met the 2014 interim target and is expected to meet the 2015 goal.

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

Most Electronics Stewardship team activity is part of the Enterprise Management and Information Technology (EMIT) charter. As such, EMIT budgets these activities.

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

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

- Optimize the configurations of data centers and monitor power consumption in data centers.
- Minimize the number of systems that exist in general office space particularly, including the number of duplicate desktop and laptop systems.
- Reduce the number of personally assigned printers.
- Continue to manage surplus or excess electronic products in an environmentally responsible manner.
- Ensure that 95 percent of newly purchased computer systems are EPEAT Silver or Gold.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

In addition the information provided in Section 12.1, LM information technology (IT) staff periodically notify users to power systems down at the end of the business day, in accordance with LM policy. This information is also on the LM Intranet and the LM's Help Desk Frequently Asked Questions page.

7.2 Power Utilization Effectiveness

LM's goals are consistent with the data centers and electronics stewardship goals outlined in the DOE SSPP. One goal is to achieve a maximum annual weighted average PUE of 1.4 by FY 2015 (the 2014 estimated PUE was 1.0).

7.2.1 Performance Status

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

Performance related to these goals is reported in CEDR Tab 5.1, "Data Centers."

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

LM monitors its electrical use at the LMBC data center in real-time. The maximum annual weighted-average PUE in 2014 was 1.0. Both the Morgantown LMBC's and the Grand Junction office's PUE scores were 1.0. Other sites lacked sufficient data for accurate reporting, but LM is trying to report PUE at all the IT-supported sites, and anticipates similar reporting in 2015.

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

Equipping the LMBC data center with separate metering was a lengthy process, during which IT staff configured the system to provide real-time data on demand. Because of the knowledge the IT staff gained from the LMBC project, they were able to meter satellite offices more easily and uniformly. The LMS Network Management team developed a method that used existing equipment to measure power usage in all LM data centers. This saved LM an estimated $20,000.00.

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

None.

7.2.2 Plans and Projected Performance

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

In 2015, LM will investigate using mandatory entry code for printing from all network-managed multi-function devices. The current voluntary effort contributes to reduced energy usage, toner cartridges needs, and paper consumption; a mandatory use of the feature would increase these savings.

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

LM met the 2014 interim target and is expected to meet this goal.

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

None.

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

- Now that the secure print function has been implemented on all multi-function printers, LM will compare paper consumption with/without the code. The change may save energy and paper, and eliminating personal printers will also save energy, paper, toner and associated maintenance costs.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

In addition to the information provided in Section 12.1, IT staff periodically notifies users to power down systems at the end of the business day in accordance with LM policy. This policy is also on the LM Intranet on the LM's Help Desk Frequently Asked Questions page.

7.3 Power Management

LM has established goals that are consistent with the data centers and electronics stewardship goals outlined in the DOE SSPP. One electronics stewardship goal is that 100 percent of eligible PCs, laptops, and monitors currently have power management actively implemented and in use.

7.3.1 Performance Status

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

This information is captured in CEDR Tab 5.1, "Data Centers," and CEDR Tab 5.3, "Electronics O&M." On CEDR Tab 5.1, columns AO and AP show the number of virtual hosts and the number of virtual operating systems running on them.

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

All desktop and laptop systems in LM are imaged with power management settings configured in accordance with the government standards. The controls for power management on all LM systems are locked, which prohibits users from changing these controls.

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

Currently, LM has 29 virtualized hardware servers doing the work of 214 individual hardware servers. Server virtualization allows a single PC server, using specialized software, to mimic the functionality of what once took many PC servers. The result of server virtualization is lower power and cooling requirements and costs and reduced space requirements than would be required with traditional server hardware.

Simultaneous with the Windows 7 rollout, LM was able to recover 53 redundant PCs held by individuals who also held laptops, representing an overall 8 percent reduction in the number of workstations. This effort has continued with functionality of multiple systems merged into a single system whenever possible. As part of this initiative any user with a desktop system is offered a laptop at the time of system replacement to reduce the need for loaner laptops in the LM environment. This effort became feasible as the difference in cost for a laptop and desktop has become essentially negligible.

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

None.

7.3.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

LM plans to continue the virtualization process where applicable. Virtualization allows for one server to perform the function of up to 100 individual servers, which results in a reduction in direct power usage and, in particular, a reduction in cooling needs, which typically represent a significant amount of energy.

In FY 2015, LM will investigate implementation of requiring code-entry for hardcopy output on all LM network-managed multi-function devices, reducing paper usage and energy consumption.

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

LM is expected to meet this goal.

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

None.

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

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

- Continue to take action to conserve energy usage at all LM data centers.
- Measure reduction of paper, toner cartridges, and power consumption after implementation of code-required printouts.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

7.4 Electronics Stewardship

LM has established goals that are consistent with the electronics stewardship goals outlined in the DOE SSPP.

7.4.1 Performance Status

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

LM makes use of electricity-monitoring and uninterruptible power supply (UPS) management utilities to measure and evaluate electricity consumption of data center facilities. Additional discrete, quantifiable data is collected and referenced via a virtual machine (VM) and the Help Desk trouble-ticketing system for details regarding desktops, laptops/notebooks, and print-related devices. Electronics acquisition and disposal are reported in CEDR Tab 5.2, “Electronics Acq&Disp.”

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

IT has developed and, over the years, refined the process of evaluating electronic equipment for purchase and actions taken for disposal of old equipment. IT personnel check vendor descriptions as well as the EPEAT website [http://www.epeat.net] to ensure that electronic equipment selected for purchase is EPEAT, Energy Star, and FEMP compliant before sending the request to Purchasing/Contracts where compliance is confirmed. When disposition of equipment occurs, IT coordinates with Personal Property personnel to provide pictures for posting to the GSA Xcess site. For equipment not appropriate for sale, local donation avenues have been established appropriate for the location to facilitate reuse of equipment no longer useful to LM. Recycling is viewed as a last resort if sale or reuse is not a viable option.

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

The late FY 2013 relocation of the Grand Junction data center from an old building to a newly constructed LEED structure had a significant electronics stewardship impact. The footprint of the data center was reduced by half and old air conditioning and other facilities equipment was upgraded to newer, more efficient models. This move facilitated the continuing growth of more energy efficient virtual machine technology and better measurement of the improved stewardship.

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

None.

7.4.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

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

Progress will continue in the efficient use of desktop and notebook/laptop systems, merging use where possible to reduce the number of devices in operation. The electronic efficiency of these systems is progressing rapidly with successive model enhancements. LM will remain vigilant in the awareness of these improvements and incorporate them as they become available.

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

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

LM met the 2014 interim target and is expected to meet the 2015 goals.

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

Most of the activity performed by the Electronics Stewardship team is part of the EMIT charter. As such, these activities have been budgeted for by EMIT.

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

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

- Optimize the configurations of data centers and monitor power consumption in data centers.
- Minimize the number of systems that exist in general office space particularly, including the number of duplicate desktop and laptop systems.
- Reduce the usage of personal printers.
- Educate users on how they can be conscientious consumers.
- Continue to manage purchases and surplus or excess of electronic products in an environmentally responsible manner.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

In addition to the information provided in Section 12.1, users receive periodic notification via the Intranet or e-mail that LM policy is to power systems down at the end of the business day. This information is also posted to the LM Intranet on the Help Desk Frequently Asked Questions page.

8 Renewable Energy

8.1 Renewable Energy

The DOE SSPP required DOE to have 7.5 percent of its electricity consumption from renewable energy (RE) sources by FY 2013, in accordance with EPAct 2005. (EPAct 2005 Section 203 provides for a double bonus if the RE is produced onsite and the Renewable Energy Certificates [RECs] are retained.)

Renewable energy consumption and climate change initiatives have been elevated by the President’s Climate Action Plan and each effort now has its own goal section in agency SSPPs.

Renewable Energy is now a standalone goal (Goal 8), according to DOE’s 2014 SSPs guidance document. The goal is for 20 percent of annual electricity consumption to come from renewable sources by 2020; (formerly, the goal was 7.5 percent by FY 2013 and thereafter). Interim targets are pending.

8.1.1 Performance Status

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

The existing renewable energy projects are shown on CEDR Tab 3.2a, "Operating On-Site RE." LM's total electrical use for FY 2014 was 5,662 MWH. Electricity derived from renewable sources was 717 MWH. Because all of the renewable energy credits were retained, this figure is doubled. In addition, LM purchased 522 MWH in green energy for a total of 1,957 MWH derived from renewable sources. This resulted in 34.6 percent of LM electricity being derived from renewable sources. The major reason for the increase from last year is that the Tuba City 385 kW photovoltaic system was in operation for a complete year.

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

The 285 kW solar panel installation at Tuba City was on line for a complete year. The majority of LM's renewable energy is produced at the Tuba City site which has 336 kW of onsite solar generation capability.

The Weldon Spring Storm Shelter was added this year. It is powered by a 1.8 kW solar panel.

The Grand Junction Disposal Site SOARS ECAP Lysimeters-Router was added this year. It is powered by a 20 watt solar panel.

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

Renewable energy (electricity) production onsite at multiple LM locations in 2014 was over 717 megawatt hours, which is 12.66 percent of LM's total 2014 electricity usage of 5,662 megawatt hours. This is produced by approximately 168 renewable energy generating systems LM-wide. See CEDR Tab 3.2a for details. Regulations allow LM to earn double credit for onsite renewable energy generated on either federal or tribal land. This raises the total claimed to 25.3 percent of total LM electrical use. With the addition of renewable energy credits that LM purchased in 2014 or 9 percent of total electrical use. The total renewable power percentage claimed for 2014 is 34.6 percent. The increase in the percentage of energy derived from renewable sources is mainly due to the 285 kW PV system at the Tuba City site being operational for a full year.

All renewable energy that was generated onsite was consumed onsite. Tuba City is the only site where the solar panels are connected to the utility grid. Whenever excess energy is generated at the Tuba City site, it is put back on the grid. The utility gives LM credit for that energy on the next month's bill. Because the utility does not resell the renewable energy, LM can claim it as consumed onsite.

Additional activities include the following:

- Photovoltaic systems are used to provide power for groundwater pumping at the Rifle and Shiprock sites. The Durango, Colorado, Disposal/Processing Site uses solar energy to power the enhanced evaporation system at the pond, the water level and specific conductivity data loggers for three groundwater wells, and the onsite meteorological station. A similar system is in place at the Monument Valley site.
- Purchase of RECs continued at the Grand Junction disposal site, the Monticello site, the Fernald site, and at the Weldon Spring site.

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

None.

8.1.2 Plans and Projected Performance

Discuss plans and expectations for FY 2015 and beyond:

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

Review current LM renewable energy produced onsite versus current renewable energy credits purchased and investigate possible renewable energy projects on LM sites that could replace the purchased renewable energy credits.

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

LM is expected to meet this goal.

Until 2013, LM met the 7.5 percent goal since 2010 mainly by purchasing Green Energy credits. But starting in 2013 addition of the Tuba City site 285 kW PV panel system (which contributed to the new site-wide capacity of 336 kW) enabled LM to meet the 7.5 percent goal without the purchased Green Energy credits in 2014. Since LM met the 20 percent goal in 2014, it will reevaluate purchasing renewable energy credits in 2015.

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

None at this time.

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

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

- Continue to support the effort to lease LM sites for development of renewable energy generating projects by private companies.
- Continue using photovoltaic systems to provide power for groundwater pumping at the Rocky Flats and Tuba City sites.
- Review current LM renewable energy produced onsite vs current purchased renewable energy credits and investigate possible renewable energy projects on LM sites that could replace the purchased renewable energy credits needed to meet the 20 percent goal by 2020.
- Continue monitoring progress of the proposed solar garden at the Durango site. American Capital Energy has submitted an offer to La Plata Electric Association to build a solar garden on the Durango site. The utility issued a request for proposal, looking to purchase solar energy from "solar gardens" through a system in which the public can purchase a piece of the solar garden and participate in the tax credits. This assists DOE in its efforts to establish energy parks on former nuclear-defense facilities.
- Evaluate solar hot-water heating options for any new buildings. Currently there are no planned new buildings. However, if visitor centers are built at Rocky Flats, Weldon Spring, or Grand Junction, as being discussed, solar hot-water heating and other renewable energy features will be evaluated in the new buildings.

e. Request for technical assistance with reference to CEDR project number, if needed

None.

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

See information provided in Section 12.1.

9 Climate Change Resilience

According to EO 13514, Sections 8(i) and 16, and subsequent Council on Environmental Quality Implementing Instructions, DOE developed and submitted a Climate Change Adaptation Plan as part of the SSPP. EO 13653, *Preparing the United States for the Impacts of Climate Change,"* issued November 6, 2013, required updates and changes to agency Climate Adaptation Plans to further incorporate Climate Change considerations in decision making. The DOE Climate Change Adaptation Plan directs DOE programs to ensure that all facilities address climate change adaptation and resilience in their SSPs, and establishes goals and objectives applicable to DOE sites. These goals and objectives include:

- Risks to Missions, Operations and People
- Building Resilience
- Regional and Local Coordination
- Modernization of Programs

Performance and LM progress in 2014 toward the newly established goals/objectives for climate resiliency is summarized in Attachment D. A copy of the Climate Change Screening Level Vulnerability Assessment Survey is provided in Attachment E.

10 Energy Performance Contracts

10.1 Energy Performance Contracts

a. Characterize and provide examples of efforts to leverage alternative financing such as ENABLE, ESPC, UESC, and PPA. Progress on the President's performance contracting challenge should be reported to the SPO on a monthly basis

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

b. Describe challenges to use of alternative finance vehicles and provide recommended solutions

LM has not identified any viable, energy performance contract projects for 2015. LM will evaluate future projects for energy performance project viability.

11 Budget and Funding

11.1 Overall Status

LM funds long-term sustainability projects in the normal budget process. EMS Coordinators submit costs to LM Budget Specialists in the Sustainability Crosscut budget and other related budget calls.

LM plans to implement energy efficiency projects through FY 2020 that may significantly reduce energy intensity compared to the FY 2003 baseline and Scope 1 and Scope 2 GHG emissions. LM selects projects primarily by evaluating life-cycle costs. The projects' initial goals include having a payback time that is less than, or equal to 25 years. Based on (1) the return-on-investment criteria and (2) the level of development of scope and implementation cost estimates of the projects listed in CEDR Tab 3.3b, "Cancel ECM & RE Measures," which includes a worksheet that addresses ECMs and RE measures. Energy Efficiency or Renewable Energy teams staff will coordinate with Task Assignment managers, site leads, and engineering staff to develop projects. LM accounting and technical staff will review in-depth the most promising proposals.

LM will continue to accomplish deferred maintenance tasks identified for energy-consuming buildings/facilities annually, as funding allows. DOE Order 430.1B requires a CAS every 5 years of all buildings/facilities owned/leased by DOE. Deferred maintenance tasks identified in these assessments will be accomplished prior to the end of FY 2018, depending on funding availability.

11.2 Site-Specific Measurable Goals and (3–5) Milestones

LM will do the following:

- Determine the cost-effectiveness of projects but also consider the implementation of new technologies for demonstration purposes, the facilitation of technology transfer, and the accomplishment of deferred maintenance tasks.
- LM issued a report in September 2014 that analyzed alternative groundwater treatment technologies that could replace the current pump and treat system at the Tuba City site. The current system is energy inefficient and mechanically unreliable. The report discussed alternatives such as, various types of reverse osmosis, electrocoagulation, and passive, mechanical, and solar enhanced evaporation systems. However, LM must first consider whether any type of active groundwater treatment will be able to meet the current compliance standards (maximum contaminant levels or MCLs). Next, LM will support its answer with empirical data, and evaluate the source term, and update its numerical groundwater fate and transport model. Lastly, DOE, its regulators and stakeholders will review and modify the compliance strategy, if necessary. Compliance strategy change may include discontinuing any type of active treatment, including those identified in the alternatives analysis, while demonstrating that LM is still fulfilling its mission. LM and its Tuba City regulators and stakeholders, will continue this process through FY 2015.
- Continue to refine the scope and estimated implementation costs, evaluate funding sources for financial and technical rigor, and seek appropriate funding sources over the next 3 years for those projects that are life-cycle cost-effective. LM's next budget request will be updated to include projects that will allow sustainability goals to be met.
- Pursue additional training on costs, scheduling, estimating, and preparing return-on-investments and simple paybacks in 2015.
- Continue to examine reinvestment potential to utilize cost savings realized from sustainability efforts.

11.3 Success Stories, Accomplishments, Lessons Learned, and Best Management Practices

LM plans budgets for the EMS, including sustainability, and specific EMS projects five out years. During the process, LM identifies the major sustainability goals and related activities (e.g., water audits or annual reporting events) and specific projects. EMS staff coordinate with LM Budget Specialist during their life-cycle baseline budgeting, to include sustainability figures. To account for funding changes, EMS and LM budget staff identify tentative projects as well as selected projects beyond the 5-year window.

LM utilizes a multi-year sustainability budgeting plan to identify funds needed to approve projects in a timely manner and to improve ease of data collection for the multiple budget requests. With a 5-year look ahead, LM identifies the major sustainability goals and related activities (e.g., water audits or annual reporting events) and the projects that will be necessary to achieve and track the goals. During the life-cycle baseline budget process, sustainability project spreadsheets are developed and utilized to report sustainability budget numbers. The spreadsheet includes a column that identifies projects that have not yet been scheduled or that extend beyond the 5-year window. This allows flexibility in moving projects from one fiscal year to another as available funding changes.

12 LM's Standard EMS Operations

12.1 EMS Organization

LM's EMS comprehensively incorporates life-cycle environmental considerations into all aspects of the LM mission. LM's EMS is a joint program between LM and its prime contractor for LMS contract. The EMS helps LM use its finite resources wisely, minimize wastes and adverse environmental impacts, and comply with the laws, regulations, DOE requirements, and other applicable requirements that protect the environment, public and worker health, and resources. EMS enables LM to implement sustainable environmental stewardship practices that enhance the protection of air, water, land, and other natural and cultural resources affected by DOE operations. Implementing the EMS is integral to LM's mission and to achieving excellence in environmental stewardship.

The EMS team is jointly led by two EMS sustainability coordinators, one from LM and one from the LMS contractor. They are the points-of-contact for the EMS. Responsibilities of the EMS sustainability coordinators include overseeing the development and implementation of the EMS, actively participating in the EMS core team, reporting progress to management, conducting management reviews, facilitating management involvement in EMS, and generating end-of-year reporting.

The EMS core team includes representatives from applicable programs and projects from LM and LMS contractor management. Their responsibilities include (1) overseeing the development and implementation of the EMS sustainable program teams related to sustainability requirements (listed in Section 11.2); (2) approving EMS goals and targets; and (3) functioning as the steering committee for management-level decisions.

In 2014, the LM EMS team continued applying DOE regulations and EOs. Progress on activities related to environmental, energy, and transportation management is evaluated and reported quarterly. The EMS team is divided into the following sustainability teams and two ancillary teams:

- Electronics Stewardship
- Energy Efficiency and Greenhouse Gas Reduction
- Renewable Energy
- Sustainable Acquisition
- Sustainable Buildings (including cool roofs and regional planning)
- Vehicle and Fuel Management
- Waste Minimization and Pollution Prevention
- Water Conservation
- Climate Change Adaptation
- Media (ancillary team)
- Training (ancillary team)

Each EMS sustainability team consists of a team lead, an LM advocate, an LMS contractor senior management advocate, and several other LM and LMS employees. Each team is responsible for managing and implementing its individual sustainability initiatives and coordinating with other teams on crosscutting goals. Each team updates their respective sections within an "EMS Sustainability Awareness" training, which is generally provided every 2 years to all employees. Additionally, LM's sustainability teams provide awareness articles, which are published in an internal quarterly newsletter (*ECHOutlook*) at least once every 2 years. Related posters, contests, and activities sometimes accompany the articles. In 2014 the primary teams developed topic-specific awareness briefings of the goals and LM's status related to those goals, which were presented to management with open invitations to others within LM.

The EMS media and training teams provide and update the EMS Sustainability Awareness training, ensuring that it is updated and provided within the 2-year refresher period. The EMS media team works with the other sustainability teams to produce the awareness articles, which are published in the internal quarterly newsletter (*ECHOutlook*) at least once every 2 years. Related posters, contests, and activities sometimes accompany the articles to encourage behavioral changes.

The environmental compliance aspect of the EMS consists of regulatory compliance and monitoring programs that implement federal, state, local, and tribal requirements, agreements, and permits. The LMS Environmental Compliance group is integrated into program/project implementation from planning through completion to help ensure activities are performed so that the safety of the public and protection of the environment is maintained. The LMS Environmental Compliance group has developed a number of internal tools to facilitate continued compliance, including the following:

- ***Regulatory Review Report:*** A quarterly report that is a compilation of reviews of new or revised environmental laws, regulations, and DOE directives as they are published. The reviews include analysis of applicability to LM and LMS and provide recommended changes to plans and procedures if changes are warranted.
- ***Schedule of Federal/State Regulatory Reports, Permits, and Notifications:*** Identifies major environmental compliance reports and actions required for LM Sites as well as programmatic deliverables. The schedule is used to track commitments monthly and provides a brief description of the report/action, regulatory driver, responsible personnel, and due date.

The EMS sustainability team provides updates via presentations to management, and the Core Team meets as needed. The EMS environmental compliance group meets weekly, provides monthly status reports, provides quarterly reports on changing requirements, and annually assembles the *Office of Legacy Management's Summary of Annual Site Environmental Reports*. The annual EMS Management Review allows upper management to assess the strengths and weaknesses of EMS, and provides them with information that helps them make decisions affecting the future of the program. LM uses this SSP to report status on and planned activities to meet sustainability goals.

LM, with its comprehensive approach to fulfilling sustainability goals, will advance the DOE sustainability mission with a diverse approach and a concentrated effort toward the goals of 2015 and beyond. To achieve the goals, LM will work with its EMS core team, EMS sustainability teams, the environmental compliance group, and the LM operations and maintenance staff. In

addition, LM will enlist the technical expertise of its scientists and engineers to enable LM to operate sustainably and in compliance. This fostering of sustainable operations will include continued emphasis on behavior change.

12.2 Sustainability Regulatory Reporting Adherence

The purpose of this SSP is to outline the strategies for managing, funding, and implementing various energy-related activities at LM. This plan reflects progress made toward, and strategies in place for, accomplishing the goals and requirements established by:

- EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, October 5, 2009.
- EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, January 24, 2007.
- EO 13653, *Preparing the United States for the Impacts of Climate Change,* November 6, 2013.
- DOE Order 430.1B Chg. 2, *Real Property Asset Management*, April 25, 2011.
- DOE Order 436.1, *Departmental Sustainability*, May 2, 2011.
- Energy Independence and Security Act of 2007 (EISA), Section 432 (42 USC 8253[f]).
- Energy Policy Act of 2005 (EPAct 2005), Public Law (PL) 109-58.
- Energy Policy Act of 1992 (EPAct 1992), PL 102-486.
- National Energy Conservation Policy Act of 1978 (NECPA), PL 95-619.
- DOE Strategic Sustainability Performance Plan (SSPP), multiple years.
- Former Secretary of Energy Dr. Steven Chu, "*Installation of Cool Roofs on Department of Energy Buildings*," Memorandum for Heads of Departmental Elements, June 1, 2010.
- Former Secretary of Energy Dr. Steven Chu, "*Management of Fleet Inventory*," Memorandum for Under Secretaries, Office of Management (Headquarters Fleet), PMAs, and Headquarters Fleet Managers, Sustainability Performance Office, January 27, 2011.
- DOE Policy 450.4A, *Integrated Safety Management Policy*, April 25, 2011.
- LM Policy 450.9, *Environment, Safety, and Health Policy*, November 29, 2011.
- LM *Site Management Guide (Blue Book),* December 2012.
- LM *2011-2020 Strategic Plan* (DOE/LM-0512)*,* January 2011.

The LMS contractor *Quarterly Performance Assurance Report* encompasses the sustainability teams and compares the status of their activities against the goals LM established in accordance with the requirements and directives. The report includes both environmental sustainability and environmental compliance information on significant activities that have occurred during the preceding 90 days, status against identified targets, and planned activities for the next 90 days.

In 2014, LM successfully passed an internal EMS audit. Internal audits are performed in the years that an external audit does not take place. In 2012, LM successfully passed its triennial external EMS audit and submitted the Declaration of Conformance. This is a credit to everyone in the organization, past and present, in all aspects of both environmental compliance and sustainability. It is very important that a legacy organization demonstrate leadership in sustainability. LM is working to set up its next external EMS audit for spring of 2015.

III. Fleet Management Plan

To address recommendations in the pending DOE Inspector General Audit report, "*The Department's Fleet Vehicle Sustainability Initiatives*," LM has summarized its site-level policies and procedures for the management of its fleet inventory, including fuel and vehicle acquisition and fleet inventory optimization. LM's Fleet Management Plan is provided in Attachment C.

This page intentionally left blank

Attachment A

Environment, Safety, and Health Policy

This page intentionally left blank

Summary of Changes
to
Policy 450.8
Environment, Safety, and Health
Revised Version Issued as Policy 450.9

LM Policy 450.8 Environment, Safety, and Health of 05/29/09, has undergone minor revisions. This Policy has been revised to include a new Executive Order and make revisions for updated DOE Orders that LM abides by. Please replace LM Policy 450.8 with **LM Policy 450.9.**

The most recent and official controlled hard copy version of this document resides with LM's Directives Coordinator. An electronic version of the controlled document has been placed on the LM Intranet for employee use. Printed hard copies of this electronic version are considered uncontrolled documents.

INITIATED BY: [Insert Office]
NO. OF PAGES/ATTACHMENTS: 2 pages, 0 attachment

U.S. DEPARTMENT OF ENERGY

Legacy Management

POLICY

LM P 450.9

Approved: **11-29-11**

The most recent and official controlled hard copy version of this document resides with LM's Directives Coordinator. An electronic version of the controlled document has been placed on the LM Intranet for employee use. Printed hard copies of this electronic version are considered uncontrolled documents.

SUBJECT: ENVIRONMENT, SAFETY, AND HEALTH POLICY

---

1. OBJECTIVE. This policy reaffirms the Department of Energy (DOE), Office of Legacy Management's (LM) commitment to safety of our workers, respect for the environment, and protection of public health and safety through our environment, safety and health (ES&H) program.

2. CANCELLATION. This policy cancels LM P 450.8, *Environment, Safety, and Health Policy*, dated 05-29-09.

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

4. REQUIREMENTS. Not Applicable

5. RESPONSIBILITIES. It is the responsibility of all LM personnel to support the ES&H policy to the utmost of their abilities. This policy, as set forth and supported by all members of senior management, will be reviewed annually and updated as necessary. Senior management will ensure that these expectations are made clear and available to all LM personnel, including DOE-LM employees and contractors, research associates, LM stakeholders, and the public.

6. POLICY. It is DOE policy that work be conducted safely and efficiently and in a manner that ensures protection of workers, the public, and the environment. LM has a diversity of Goals, which support our mission "To manage 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 worker and public safety and the environment is essential.

   With this policy, LM is pledging to protect the public, workers, and the environment by complying with all applicable requirements, committing to prevention of pollution, and achieving continual improvement. LM continues to make ES&H an integral part of our day-to-day decision-making and long-term planning processes across all goals, activities

INITIATED BY: [Insert Office]
NO. OF PAGES/ATTACHMENTS: 2 pages, 0 attachment

and functions by following an Integrated Safety Management System (ISMS) and an Environmental Management System (EMS) that are integrated to the fullest extent practicable. LM will strive to improve our ES&H programs and sustain compliance through the concerted process of continuous performance improvements using performance measurements such as objectives and targets.

7. REFERENCES.
   a. DOE Order 436.1, Environmental Sustainability.
   b. DOE P 450.4A, Integrated Safety Management Policy.
   c. Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management.
   d. Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance.

Approved: Original signed by
David W. Geiser **11/29/11**
Director
Office of Legacy Management

Distribution: As required

The most recent and official controlled hard copy version of this document resides with LM's Directives Coordinator.
An electronic version of the controlled document has been placed on the LM Intranet for employee use. Printed hard copies of this electronic version are considered uncontrolled documents.

INITIATED BY: [Insert Office]
NO. OF PAGES/ATTACHMENTS: 2 pages, 0 attachment

This page intentionally left blank

Attachment B

FIMS Excluded Building List and Certification Letter

This page intentionally left blank

U.S. Department of Energy
Facilities Information Management System
Energy Consuming Excluded Buildings and Trailers List

Program Office LM

Site 08024 Monticello, UT, Disposal and Processing Sites

Property ID Justification Comments:	Real Property Unique ID	Property Name	Exclusion Part	Property Type	Gross SQFT	Excluded Facilities (GSF)
MNT-BLDG-STORSHED	208390	STORAGE SHED	D - Essentially only lighting	Building	260	260

Shed only uses minimal lighting. Shared meter.

This report qualifies DOE Owned, DOE Leased, Contractor Leased, Contractor License and Permit buildings and trailers where the Excluded Facilities (GSF) is greater than zero.

U.S. Department of Energy
Facilities Information Management System
Energy Consuming Excluded Buildings and Trailers List

Program Office LM

Site 08031 Pinellas County, FL, Site

Property ID Justification Comments:	Real Property Unique ID	Property Name	Exclusion Part	Property Type	Gross SQFT	Excluded Facilities (GSF)
PIN-BLDG-OFFICE Fully serviced lease	143457	STAR CTR OFFICE PORTION OF LEASE	C - Fully serviced lease	Building	1,330	1,330

This report qualifies DOE Owned, DOE Leased, Contractor Leased, Contractor License and Permit buildings and trailers where the Excluded Facilities (GSF) is greater than zero.

U.S. Department of Energy
Facilities Information Management System
Energy Consuming Excluded Buildings and Trailers List

Program Office LM

Site 08034 Rocky Flats, CO, Site

Property ID Justification Comments:	Real Property Unique ID	Property Name	Exclusion Part	Property Type	Gross SQFT	Excluded Facilities (GSF)
RFS-BLDG-EQUIPSTOR	140115	EQUIPMENT STORAGE SHED	D - Essentially only lighting	Building	1,118	1,118

Solar panels provide power to lights only inside structure.

This report qualifies DOE Owned, DOE Leased, Contractor Leased, Contractor License and Permit buildings and trailers where the Excluded Facilities (GSF) is greater than zero.

U.S. Department of Energy
Facilities Information Management System
Energy Consuming Excluded Buildings and Trailers List

Program Office LM

Site 08035 Rifle, CO, Disposal/Processing Site

Property ID Justification Comments:	Real Property Unique ID	Property Name	Exclusion Part	Property Type	Gross SQFT	Excluded Facilities (GSF)
RFO-TRLR-ERSP	207375	SINGLE WIDE TRAILER - ERSP	B - Privately owned	Trailer	672	672
Rental Agreement						

This report qualifies DOE Owned, DOE Leased, Contractor Leased, Contractor License and Permit buildings and trailers where the Excluded Facilities (GSF) is greater than zero.

U.S. Department of Energy
Facilities Information Management System
Energy Consuming Excluded Buildings and Trailers List

Program Office LM

Site 08052 Fernald, OH, Site

Property ID Justification Comments:	Real Property Unique ID	Property Name	Exclusion Part	Property Type	Gross SQFT	Excluded Facilities (GSF)
FER-BLDG-OFFICE	203707	DELTA BUILDING	C - Fully serviced lease	Building	10,408	10,408

Lessor pays all utilities

This report qualifies DOE Owned, DOE Leased, Contractor Leased, Contractor License and Permit buildings and trailers where the Excluded Facilities (GSF) is greater than zero.

U.S. Department of Energy
Facilities Information Management System
Energy Consuming Excluded Buildings and Trailers List

Program Office LM

Site 08066 Grand Junction, CO, Site

Property ID Justification Comments:	Real Property Unique ID	Property Name	Exclusion Part	Property Type	Gross SQFT	Excluded Facilities (GSF)
GJO-BLDG-B46 Full service lease	211272	RTC LEASE-BULDING 46	C - Fully serviced lease	Building	3,970	3,970
GJO-BLDG-B2 Fully Service Lease	208140	RTC LEASE-BUILDING2	C - Fully serviced lease	Building	1,684	1,684
GJO-BLDG-B810 rent includes all utilities	204554	RTC LEASE-BUILDING810	C - Fully serviced lease	Building	25,495	25,495
GJO-BLDG-B12 Fully Services Lease	208138	RTC LEASE-BUILDING12	C - Fully serviced lease	Building	7,461	7,461
GJO-BLDG-B32 Fully Serviced Lease	208137	RTC LEASE-BUILDING32	C - Fully serviced lease	Building	4,616	4,616
GJO-BLDG-B938 Fully Service Lease	208135	RTC LEASE-BUILDING938	C - Fully serviced lease	Building	19,834	19,834

This report qualifies DOE Owned, DOE Leased, Contractor Leased, Contractor License and Permit buildings and trailers where the Excluded Facilities (GSF) is greater than zero.

U.S. Department of Energy
Facilities Information Management System
Energy Consuming Excluded Buildings and Trailers List

Program Office LM

Site 08066 Grand Junction, CO, Site

Property ID Justification Comments:	Real Property Unique ID	Property Name	Exclusion Part	Property Type	Gross SQFT	Excluded Facilities (GSF)
GJO-BLDG-STORSHED	207408	STORAGE SHED	D - Essentially only lighting	Building	336	336

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.

This report qualifies DOE Owned, DOE Leased, Contractor Leased, Contractor License and Permit buildings and trailers where the Excluded Facilities (GSF) is greater than zero.

U.S. Department of Energy
Facilities Information Management System
Energy Consuming Excluded Buildings and Trailers List

Program Office LM

Site 08068 Westminster, CO, Office Site

Property ID Justification Comments:	Real Property Unique ID	Property Name	Exclusion Part	Property Type	Gross SQFT	Excluded Facilities (GSF)
WST-BLDG-OFFICE utilities paid by Lessor	204031	WESTMINSTER OFFICE SPACE LEASE	C - Fully serviced lease	Building	16,010	16,010

This report qualifies DOE Owned, DOE Leased, Contractor Leased, Contractor License and Permit buildings and trailers where the Excluded Facilities (GSF) is greater than zero.

U.S. Department of Energy
Facilities Information Management System
Energy Consuming Excluded Buildings and Trailers List

Program Office LM

Site 08084 Weldon Spring, MO, Site

Property ID Justification Comments:	Real Property Unique ID	Property Name	Exclusion Part	Property Type	Gross SQFT	Excluded Facilities (GSF)
WEL-BLDG-STORMSHELTR	215411	STORM SHELTER	D - Essentially only lighting	Building	560	560
Solar panels provide power only to lights inside structure.						

This report qualifies DOE Owned, DOE Leased, Contractor Leased, Contractor License and Permit buildings and trailers where the Excluded Facilities (GSF) is greater than zero.

This page intentionally left blank

Attachment C

LM Fleet Management Plan

This page intentionally left blank

Stoller

LMS/POL/S11157-1.0

Fleet Management Plan

Work performed under DOE contract number DE-LM0000415
for the U.S. Department of Energy Office of Legacy Management.

This document has been designed for online viewing.

Contents

Abbreviations ii
1.0 Fleet Management Structure 1
1.1 The U.S. Department of Energy (DOE) Office of Legacy Management (LM) Fleet Dynamic 1
2.0 Vehicle Acquisition 1
2.1 Choosing a Vehicle 1
2.2 Approvals for Leased Vehicles 2
3.0 Fuel Infrastructure 2
3.1 Impact on Acquisition Strategy 2
4.0 Vehicle Use and Policies 2
4.1 Checkout Process 2
4.2 Anti-Idling Policy 3
4.3 Education 3
4.4 Personal and Home-to-work Use 3
5.0 Additional Policies and Activities 4

Table

Table 1. LM Fleet Structure 1

Abbreviations

AFV	alternative fuel vehicle
DOE	U.S. Department of Energy
E85	ethanol fuel blend
EMS	Environmental Management System
EPACT	Energy Policy Act
GSA	U.S. General Services Administration
HQ	Headquarters
LM	Office of Legacy Management

1.0 Fleet Management Structure

1.1 The U.S. Department of Energy (DOE) Office of Legacy Management (LM) Fleet Dynamic

The LM/contractor Fleet Management group is centrally located at the LM office in Grand Junction, Colorado. From this location, LM/contractor supports and manages fleet vehicles at eight manned locations that are used to accomplish the ever-increasing LM mission of long-term surveillance and maintenance of current sites (i.e., those identified in Appendix A of LM's *Site Management Guide [Blue Book]*) and proposed future sites (i.e., those identified in Appendix B of the Blue Book).

LM's fleet consists predominantly of U.S. General Services Administration (GSA) leased vehicles, with the exception of two LM-owned vehicles at the Fernald, Ohio, Site that are only used to transport and operate bed-mounted Geoprobe drilling equipment. LM's current fleet structure is outlined below in Table 1.

Table 1. LM Fleet Structure

Fleet Vehicle Location	Number of Vehicles[d]
Fernald site	10[a] 2 owned[a, d]
Grand Junction office	10[b] 3[a]
Monticello, Utah, Disposal and Processing Sites	1[c]
LM Business Center in Morgantown, West Virginia	1[c]
Pinellas County, Florida, Site	1[c]
Tuba City, Arizona, Disposal Site	1[c]
Weldon Spring, Missouri, Site	1[c]
LM office in Westminster, Colorado	7[a]
Total	37

Notes:

[a] These sites assign their vehicles to various teams in support of the LM mission. A team consists of two or more people devoted to individual tasks or common multiple tasks in support of a unified project or goal.

[b] Due to the large number of sites that the Grand Junction office supports, it is necessary to pool vehicles to allow for appropriate support using the minimum amount of vehicles possible.

[c] All manned sites with only one assigned vehicle are required to support the mission tasks of that site on a daily basis. These tasks cannot be effectively accomplished by the use of a pooled vehicle due to distance to the nearest garaging location. The garaging location is the place where the vehicle primarily resides when not in use.

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

2.0 Vehicle Acquisition

2.1 Choosing a Vehicle

Vehicle replacements are chosen based on a like-for-like practice, or as mission changes dictate, and based on GSA guidelines. The plan is to replace all new light-duty vehicle acquisitions with a minimum of 75 percent alternative fuel vehicles (AFVs), with 100 percent of acquired

light-duty vehicles consisting of AFVs by 2015. LM will continue to strive to meet this goal going forward. When LM leases new vehicles, a list of minimum mission requirements for the vehicle requested is provided to GSA (with the LM fleet manager's approval). GSA attempts to obtain a vehicle that is as close as possible to what was requested and that meets the requirements for safety and the mission. As stewards of government appropriations, and in accordance with the Section 701 waiver process from the Energy Policy Act (EPACT) of 2005, LM will make every effort not to incur unnecessary additional costs for AFVs when it can be shown that there is no alternate fueling infrastructure within a reasonable distance of the garaging location.

2.2 Approvals for Leased Vehicles

When leasing additional vehicles through GSA, approval by the local LM fleet manager, LM's senior managers, and the Headquarters (HQ) industrial fleet manager is required. Beginning with the reduction effort in 2011, HQ started tracking all DOE fleets using Federal Automotive Statistical Tool reporting. When adding specialized accessory equipment to the leased vehicles, the only approval that is required is that of the LM fleet manager.

3.0 Fuel Infrastructure

3.1 Impact on Acquisition Strategy

Fueling infrastructure does not currently impact the LM vehicle acquisition strategy. Vehicles compatible with E85, or flex fuel, are obtained whenever possible for all light-duty use in accordance with *Presidential Memorandum−Federal Fleet Performance*, dated May 24, 2011. However, LM will maintain compliance with the Section 701 waiver process from the 2005 EPACT by identifying and preventing unnecessary incurred costs for AFVs when it can be shown that there is no alternative fueling infrastructure within a reasonable distance of the vehicle's garaging location, which is often the case at LM's remote sites.

4.0 Vehicle Use and Policies

4.1 Checkout Process

The Grand Junction office pooled-fleet procedures require personnel to schedule a GSA vehicle with the dispatcher 2 days or more in advance when the situation allows. All fleet vehicles are on a first-come, first-served basis with the exception of mission-critical needs that supersede all other requests.

Locations that have only one vehicle—such as the Tuba City, Arizona, Disposal Site; the Monticello, Utah, Disposal and Processing Sites; the Weldon Spring, Missouri, Site; the Pinellas County, Florida, Site; and the LM Business Center in Morgantown, West Virginia—fall under the responsibility of the DOE site managers. The site managers, who are critical to accomplishing the LM mission at the individual sites, then delegate to members of contractor management. The contractor managers then allocate the vehicle to be used for specific mission

tasks as they deem fit. Personnel at the LM office in Westminster, Colorado, and the Fernald site check out vehicles as their project teams and the LM mission require.

LM encourages its staff to carpool whenever possible. Opportunities for carpooling include site visits, inspections, groundwater sampling, trip consolidations, and work-trip planning.

All personnel are required, at a minimum, to provide proof of current driver's license, sign an authorization to perform a driver's background check, take the required training, and perform a pretrip inspection of the vehicle before operating a GSA vehicle. This inspection helps to visually identify any possible safety, mechanical, or property concerns. Additionally, the pretrip inspection is useful for familiarizing the driver with all of the operational functions of the vehicle (e.g., mirrors, tilt steering, climate controls) prior to leaving.

4.2 Anti-Idling Policy

LM has an anti-idling policy that encourages personnel to be energy conscious and turn off the engine during longer-than-normal idle times. This policy is to be followed as long as it accomplishes LM's mission and doesn't affect the occupant's health and safety. Idle time can be monitored using the newly initiated Network Fleet GPS monitoring equipment that is attached to each of LM's fleet vehicles.

4.3 Education

According to GSA regulations, all GSA vehicle drivers must take the HS161, *NSC [National Safety Council] Defensive Driver Training*, one-time training course before being allowed to drive a GSA vehicle. In addition, all contractors are required to take the EC100, *Environmental Management System (EMS) General Awareness*, and GSA101, *GSA Vehicle Use*, training courses. The EMS training discusses ways that operators of GSA-leased vehicles or DOE-owned vehicles can help reduce petroleum consumption and increase the use of alternative fuels to help DOE meet their EMS goals. Additionally, this training spells out the sustainability goals for petroleum reduction that LM abides by and 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.

4.4 Personal and Home-to-work Use

LM's vehicle use policy for government owned or leased vehicles only allows use for official activities that are for the accomplishment of the agency mission (FMR § 102-34.220). Additionally, use a Government vehicle for transportation between your residence and place of employment is strictly prohibited unless that transportation has been approved in writing by head of the agency (FMR § 102-34.225). The agency head may not delegate this authority (FMR § 102-5.40).

5.0 Additional Policies and Activities

Additional fuel reduction, alternative fuel use, and vehicle reduction activities and policies are driven by changes in DOE goals and strategies. LM/contractor Fleet Management uses a continual evaluation methodology to utilize appropriate vehicles to achieve the DOE mission, locate fueling infrastructure for alternate fuels in the areas where LM operates, analyze the cost of current vehicle usage, identify more feasible means for improving vehicle usage, and minimize the number of 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 site trips, educating drivers on the proper use of E85 fuel and how to locate fueling stations, and encouraging pretrip inspections of the vehicles to identify unsafe or inefficient defects that may negatively impact the goals of conventional fuel reduction and increase in alternative fuel use. LM/contractor Fleet Management group regularly monitors DOE's Office of Energy Efficiency and Renewable Energy website for updated information on alternative fueling infrastructures available at all of LM's sites. Additionally, LM identified that the department could realize increased savings by encouraging the use of electric golf carts, gators, or other non-fleet electric vehicles when the environmental factors and mission tasks allow.

LM has been consistently vigilant in reducing unnecessary travel by utilizing videoconferencing and virtual presence technology for meetings whenever possible. Although LM has not eliminated the need to travel for all meetings and trainings, the staff has reduced the amount that they travel by scheduling business events that have videoconferencing and virtual presence technology available.

This page intentionally left blank

Attachment D

Climate Change Resilience

This page intentionally left blank

9 Climate Change Resilience

According to EO 13514, Sections 8(i) and 16, and subsequent Council on Environmental Quality Implementing Instructions, DOE developed and submitted a Climate Change Adaptation Plan as part of the SSPP. EO 13653—*Preparing the United States for the Impacts of Climate Change,* issued November 6, 2013, required updates and changes to agency Climate Adaptation Plans to further incorporate Climate Change considerations in decision making. The DOE Climate Change Adaptation Plan directs DOE programs to ensure that all facilities address climate change adaptation and resilience in their SSPs, and establishes goals and objectives applicable to DOE sites. The following table summarizes LM performance to the previous Climate Change Adaptation objectives and provides conceptual plans to meet the newly established goals/objectives for Climate Resiliency.

New SSP Objective	Requirements	FY 2014 Performance	Plans for FY 2015 and Beyond
Risks to Missions, Operations and People			
Objective 1: DOE Climate Change Adaptation Screening Assessment			
Complete Voluntary Screening Assessment no later than December 8, 2014.		LM is electing not to complete the Voluntary Screening Level Vulnerability Assessment at this time due to site considerations that would have to be captured in the survey for many sites or in a separate survey for each LM site.	• LM downloaded a copy of the survey to use in further evaluating the climate vulnerabilities of the organization.
Objective 2: Determining Risk			
• Describe climate change related impacts and associated risk that has been determined to affect site mission, operations and personnel. • For each identified risk sites should include: o The impact, associated risks, and affected policy, program or operation o A brief statement of the rationale for risk determination. • Sites should use this element to establish a framework to continually review and update impact assessments in future site-wide planning efforts. o Address both near -term and long-term vulnerabilities o On an appropriate scale o Ensure regional or local vulnerabilities that affect site mission are included.		• Ongoing review of National Climate Assessment information and other climate science resources to further understand potential risks especially with regard to manned sites, disposal cells, and groundwater remediation systems. • Completed draft *Future Potential Risks for LM Sites* reports. • Conducted an organization-wide Climate Change Adaptation Awareness campaign o Article in the Environmental Communication and Health and Safety Outlook (ECHOutlook) newsletter o Email message: Wetland ecosystem services that buffer extreme weather events	• Continue review of National Climate Assessment and other climate science resources • Consider augmenting *Future Potential Risks for LM Sites* reports and with climate change risk information. • Continue to participate in DOE Climate Change Adaptation Working Group teleconferences • Provide Climate Change Adaptation presentation to LM Senior Management

DRAFT

New SSP Objective	Requirements	FY 2014 Performance	Plans for FY 2015 and Beyond
• Identify how each site will assess and build needed capacity among site personnel o Education and Awareness Training o Internal working groups on identifying and addressing climate change adaptation o Other related internal communications and education activities		o Email message: DOE Climate Change Policy and Performance Objectives o Email message: Climate Change Resilience with specific resources for groundwater remediation considerations and potential scenarios o *Chasing Ice* Documentary presentation and discussion forum (Grand Junction Office) • Participated in DOE Climate Change Adaptation Working Group teleconferences and review of the 2014 *DOE Climate Adaptation Plan*	
Building Resilience			
Objective 3: Current Activities			
• Describe/Outline ongoing plans designed to address climate impacts to missions, operations, and people as well as policies and programs that include consideration of climate risks. Identify the following in the outline. o The climate risk that is the driver for the action o The desired outcome of the program, policy or plan o An indication of the maturity of the effort such as "recently initiated" or "ongoing" o The responsible component/office; o Any milestones or timelines used to determine progress and success. • Use this exercise to evaluate current activities that may not explicitly call out climate change impacts but nonetheless are an integral part of resilience. o Emergency planning operations, natural hazard assessments, and continuity of operations protocols. • Sites should describe how climate change risk will influence these activities if it has not already.		Ongoing activities include: • Exploring and applying innovative ways to reduce Long-term Surveillance and Maintenance (LTS&M) costs and risks to human health and the environment. • Improving knowledge and tools to move long-term stewardship strategies and methods into the "state of the practice" at LM sites. Focus areas include Surface Projects; Subsurface Projects; and Remote Monitoring and Analytics. Surface and subsurface changes resulting from a changing climate can impact the LM mission. The data and analysis enable us to track and evaluate these changes with regard to our long-term stewardship strategies. • **Surface Projects:** Natural soil-forming processes and ecological succession are changing the as-built engineering properties of UMTRCA covers (and other surface remedies) in ways that could increase LTS&M costs and alter long-term	Proposed conceptual approach: • Climate Scenarios: Identify climate change scenarios for UMTRCA disposal sites. Develop criteria and select a subset of UMTRCA sites for a range of variables such as climates, ecology, cover designs, and risks. Develop scenarios of past, present, and future climate using paleoclimate data, meteorological data, and climate change models. Document climate change trends and extreme events for all three time frames. • Conceptual Evaluation of Future Vulnerability and Risk: Identify potential impacts of climate change on the function and performance of UMTRCA disposal cell covers and risks (e.g., risks to human health and the environment and risks of not satisfying design and performance criteria). • Conceptual Evaluation of Adaptability and Building Resilience: Identify if and

DRAFT

New SSP Objective	Requirements	FY 2014 Performance	Plans for FY 2015 and Beyond
		protectiveness. LM is working on projecting the long-term performance and adaptability of disposal cell covers to climate change and related changes in cover ecology and soil morphology. • **Subsurface Projects**: One focus of the Subsurface Projects is to identify and evaluate the dominant subsurface processes acting to decrease the rate of groundwater remediation. • **Monitoring and Analysis Projects:** Support the need to conduct complex geochemical and ecological testing, collect large amounts of real time data from remote locations, rapidly interpret and visualize the data.	how covers were designed to adapt to climate change, if and how ongoing natural processes may actually increase cover resilience, and in what ways LM could enhance resilience. • Tools for Projecting Long-Term Performance: Assess current models and other tools for projecting the long-term performance of covers, and identify key performance parameters. For example, identify models and input parameters that are applicable for simulating cover soil water balance, ecological change, radon flux, and erosion. • Natural Analogs: Use steps 2–4 to develop an approach for selecting and investigating natural analogs of the impacts of climate change on the soils and ecology of disposal cell covers. This would require recent climate data, and soil and vegetation surveys, to find present-day settings that match selected future-environment scenarios. And then characterize key soil and ecological parameters of analog sites for input to the cover performance models in Step 5. • Model Future Cover Performance and Risk: Develop a framework for using Steps 1–6 to model future performance of covers. Document and interpret results with respect to cover performance, risk to human health and the environment, regulatory requirements, future site inspections and monitoring, and cover enhancement options (if warranted).

DRAFT

New SSP Objective	Requirements	FY 2014 Performance	Plans for FY 2015 and Beyond
Objective 4: Future Activities			
	• Describe plans designed to address climate impacts to missions, operations, and people as well as policies, and programs that will be modified to include consideration of climate risks. When outlining these future programs that will be modified to include consideration of climate risks. • Outline the above and identify o The climate risk that is the driver for the action o The desired outcome of the program, policy, plan o The responsible component/office o Any milestones or timelines used to determine progress and success	• The Technology Deployment Strategic Planning initiative (TDSP) initiative facilitates the investigation, evaluation, and deployment of promising environmental technologies for LM, focusing on technologies that improve groundwater remediation and characterization, disposal cell cover performance, and modeling. TDSP focuses on (1) Technologies Currently Deployed at LM Sites, (2) LM Future Needs, (3) Proven and Developing Technologies, (4) Direction for Technology Deployment for LM, and (5) the Applied Studies and Technology Program. The TDSP is an existing initiative that might be an appropriate avenue for climate resilience considerations.	• Use the Vulnerability Screening Survey to guide development of an implementation plan that will better prepare us for participating in future surveys and climate resilience reporting. • Develop a systematic approach for integrating climate change adaptation and resilience directives and orders into LM functions. • Engage other functional groups such as Health and Safety, Facilities, and Real Property. • Determine which LM documents would require climate change adaptation and resilience considerations and updates.
Objective 5: Real Property and Supply Chain Resilience			
	• Identify any existing or ongoing efforts to include considerations of climate change adaptation and resilience into procurement, acquisition, real property, or leasing decisions. Determine whether: o New built or leased facilities are at risk of current or future flooding o Critical systems are located within facilities to minimize risk of flooding or damage; o infrastructure such as roads are built to withstand projected heat extremes o facilities have back up power systems and reliable access to necessary fuels	• This is a new element for LM • LM conducts facility condition assessments for all real property assets and other site facilities. Condition assessments are included as part of annual site inspections for regulatory framework sites.	• Sustainable Buildings Team to attend Climate Impacts & Building Resilience Strategies webinar that will address the expected climate impacts on temperatures and building performance, processes used to analyze climate impacts on building performance, key energy efficiency technologies that could increase a building's resilience, and various climate change prediction models.

DRAFT

New SSP Objective	Requirements	FY 2014 Performance	Plans for FY 2015 and Beyond
• Where sites have not taken the opportunity to formally determine how climate adaptation and resilience efforts should be included in procurement, acquisition, and real property or leasing decisions sites should o Identify plans for a process to conduct such a determination o Identification of any relevant milestones o Responsible agency components or offices			
Regional and Local Coordination			
Objective 6: Regional and Local Coordination			
• Describe regional and local partnerships with other Federal Agencies, municipalities and local organizations that improve our understanding of o Climate change science o Share best practices and data o Establish regional coordination in planning and policy		• LM scientists have established and continue to establish collaborations with state-of-the science researchers, share costs, foster education with a focus on stakeholder communities, disseminate new knowledge through conferences and workshops, and defend through peer-reviewed publications. • Lysimeter monitoring continued for a 14th year in collaboration with University of Wisconsin and Desert Research Institute, and the project continued to be valued by DOE and other agencies (nationally and internationally) involved in the design and monitoring of disposal cells. • Organized and began collaboration (and cost sharing) with the University of Arizona to develop Monticello Site Water Balance project components as part of a doctoral (PhD) program • A University of Arizona PhD student is working with LM scientists in developing a work plan to demonstrate an approach for LM to investigate the long-term climate change adaptation of disposal cell covers near Native American communities	• Follow up with National Renewable Energy Laboratory Contacts • Initiate Bureau of Land Management contacts for applicable sites • Identify potential municipal contacts

DRAFT

New SSP Objective	Requirements	FY 2014 Performance	Plans for FY 2015 and Beyond

		• Water balance is an area that has the potential to be impacted by a changing climate. EPA and DOE installed a large pan lysimeter in 2000 during construction of the disposal cell cover at the Monticello site. DOE, the Environmental Protection Agency, the Nuclear Regulatory Commission and others are using the unique data from the large in-service lysimeter at the Monticello site to help guide decisions on the use of water balance covers at other sites.
		• LM Scientists gave two invited presentations on the Monticello water balance study during FY 2014:
		  ○ Uranium Recovery and Reclamation Workshop, American Nuclear Society Annual Meeting, Washington DC, November 2013.
		  ○ International Atomic Energy Agency workshop and tour, Monticello, Utah, March 2014.
		• Climate Adaptation team members made contact with the Grand Valley Global Warming Cadre and attended community information sessions and climate change discussion events (Grand Junction, CO).	

DRAFT

New SSP Objective	Requirements	FY 2014 Performance	Plans for FY 2015 and Beyond
Modernization of Programs			
Objective 7: Removing and Reforming Barriers			

• Ensure that policies or programs do not unintentionally discourage or disallow investments by external partners or contract recipients that would improve their preparedness for climate impacts.
• Examine programs to determine where such barriers may exist and how they are being or could be addressed.
• Identify and reform policies or programs that may unintentionally increase vulnerability.
  o Systemic use of outdated information to assess climate related risks
  o Policies that require building or rebuilding to outdated standards
  o Policies based on outdated assumptions of climate vulnerability.
  o Provide a description of any identified barriers
• A brief statement of the rationale for identifying the circumstance as the barrier
• The type of actions that the site believes are available to address the barrier and whether or not the action can be addressed exclusively by the site or if others will need to be involved
• Timing and expected timeframe for addressing the barrier
• Identification of any resources necessary to address the barrier.
		• This is a new element for LM	• Identify potential barriers

DRAFT

This page intentionally left blank

Attachment E

Climate Change
Screening Level Vulnerability Assessment Survey

This page intentionally left blank

Introduction

SCREENING LEVEL VULNERABILITY ASSESSMENT SURVEY

Introduction
Several Executive Orders (13514 and 13653) and the Presidential Climate Action Plan require agencies to assess the potential vulnerability of their facilities and performance to climate change, and to prepare adaptation plans. This survey is the first step in developing a DOE-wide vulnerability screening process. The survey collects information about past/ongoing effects of observed climate conditions at DOE installations. This information will be combined with data from the Facilities Information Management System (FIMS) to identify sites or issues that may require more detailed assessment. The final section of the survey elicits feedback from respondents in order to improve future versions.

Survey Instructions

You will be asked to select from a list the climate conditions experienced at your facility. For each condition selected, you will be asked to provide the dates of notable occurrences and information on impacts, responses, and post-event recovery.

Please provide the most complete information you reasonably can. Convening a small group of individuals with 'institutional memory' about the operational history of your site may be an effective approach to completing the survey. If you wish, you may download all the survey questions as a PDF from this link: Vulnerability Survey Preview .

Once you begin the survey, you will only be able to advance forward (i.e. there is no "back button"). If you close your internet browser prior to completing the survey, you can return to the survey at the point where you left off if you use the same computer and have 'cookies' enabled. At the end of the survey, there will be an option to print your responses or save them as a PDF.

Contact and Background information

Contact and Background Information

A. Please provide the following information:

Name of DOE site

Name of contact for this survey

Position title of contact

B. How long has the contact worked:

	< 2 yr	2-4 yrs	5-10 yrs	> 10 yrs
In their current position?	○	○	○	○
At this site?	○	○	○	○

C. If available, please provide a URL or upload a document that gives an overview of the site mission, facilities, general environmental features, etc. (optional)

URL:

File upload:

Choose File no file selected

Part 1: Extreme weather and related hazards

Part 1: Extreme weather[1] and related hazards

1.a) Which of the following climate hazards[2] have damaged infrastructure, interrupted utilities/other support services, or disrupted essential activities that support your site's mission over the past decade or so?
For each hazard selected below, there will be additional questions.

	Once a year or more	Occasionally	Only once	Never
Extreme Precipitation / Flooding				
Extreme Temperatures / Heat or Cold Waves				
Drought				
Wildfire				
Storms				
Snow / Ice Storms				
Coastal Flooding				
Compound Events				

1 For the purposes of this survey, a "climate extreme" (extreme weather or climate event) is the occurrence of conditions that exceed a threshold value near the upper or lower end of the range of observed values of the condition. There are no absolute thresholds used to define extremes – they vary by location. And there are no authoritative references for regional or local extreme indicator values for the United States. Thus, we ask you to rely on your intuition of what would constitute an extreme value for the conditions below for your location. For those wishing to be more precise (not required), consider an extreme value to be one that exceeds the 10th percentile relative to the 1961-1990 reference period for your region or state. For further information, visit the 'Extreme Events' page on the NOAA National Climatic Data Center website [http://www.ncdc.noaa.gov/climate-information/extreme-events].

2 For your reference, a table of hazard definitions is provided below. The definitions draw on information in the Intergovernmental Panel on Climate Change (IPCC) *Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (SREX) [http://www.ipcc-wg2.gov/SREX/].

Hazard	Definition
Extreme	Intense or prolonged precipitation that leads to overflowing of the normal confines of a stream, lake, or other body of water,

Precipitation / Flooding	or the accumulation of water over areas that are not normally submerged.
Extreme Temperatures / Heat or Cold Waves	Days, nights, or longer periods when maximum or minimum temperatures exceed or fall below normally expected levels.
Drought	A period of abnormally dry weather long enough to cause a serious hydrological imbalance.
Wildfire	An uncontrolled, extensive fire that burns vegetation and spreads rapidly.
Storms	This category includes tropical cyclones, extra-tropical (or mid-latitude) cyclones, tornadoes, thunderstorms, windstorms, and damaging hail characterized by some of the following: intense precipitation, powerful/destructive winds, and lightning.
Snow / Ice Storms	Abnormal accumulation of snow and/or ice.
Coastal Flooding	High water that occurs at the coasts of large bodies of water as a result of tides, weather systems, and sea level, usually defined in terms of hourly values observed.
Compound Events	Two or more extreme events occurring simultaneously or successively, or events that are not individually extreme but lead to extreme conditions when they co-occur (e.g., extreme precipitation events or tropical storms generated only a few days apart; co-occurrence of heat wave, drought, and wildfire; flooding following on, and exacerbated by, drought which can harden soils).

Part 2: Impacts (Precip)

Part 2: Extreme Precipitation / Flooding

Intense or prolonged precipitation that leads to overflowing of the normal confines of a stream, lake, or other body of water, or the accumulation of water over areas that are not normally submerged

---

2.a) Since approximately 2000, when was your facility negatively affected by **flooding due to extreme precipitation or flooding**?
Please list date(s) of significant or memorable events in the text box below.

2.b) For the most severe incident, what assets or activities were affected/disrupted **on site**?

- ☐ Outdoor activities or other health effects
- ☐ Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- ☐ Energy infrastructure / supply
- ☐ Telecommunications / computing / data systems
- ☐ Roads or other onsite transportation systems
- ☐ Water infrastructure / supply
- ☐ Wastewater infrastructure / processing
- ☐ Buildings (shell, contents, or major components, e.g., HVAC)
- ☐ Environmental assets (e.g., training areas, buffer zones, monitoring equipment)

- ☐ Previously remediated sites or ongoing remediation activities (e.g., mercury or other contaminants released during flooding, landfill cap integrity, monitoring station damage)
- ☐ Other (Please specify in the space provided)
- ☐ None

2.c) For this incident, what assets or activities were affected/disrupted **in the surrounding community**?

- ☐ Outdoor activities or other health effects
- ☐ Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- ☐ Energy infrastructure / supply
- ☐ Telecommunications / computing / data systems
- ☐ Transportation systems
- ☐ Water infrastructure / supply
- ☐ Wastewater infrastructure / processing
- ☐ Buildings (shell, contents, or major components, e.g., HVAC)
- ☐ Environmental assets (e.g., training areas, buffer zones)
- ☐ Other (Please specify in the space provided)
- ☐ None

2.d) How long was your facility's ability to achieve its mission interrupted for this incident?
Briefly describe the overall impact in the space provided.

- ○ Not at all
- ○ A few hours
- ○ One day
- ○ Several days
- ○ One week
- ○ More than one week

2.e) Which of the following options best describes recovery after the event? *Please select only one*.

	Expeditious	Slow
Better than pre-event	☐	☐

Same as pre-event	☐	☐
Worse than pre-event	☐	☐

2.f) Did the event lead to changes to disaster preparedness, infrastructure planning, or site management?

- ☐ No significant changes made
- ☐ Modified facilities / infrastructure
- ☐ Updated site disaster management / continuity [or similar] plans
- ☐ Coordinated disaster planning with surrounding community
- ☐ Other (Please specify in the space provided)

Part 2: Impacts (Temp)

Part 2: Extreme Temperatures / Heat or Cold Waves

Days or longer periods when maximum temperature, or nights when minimum temperature, exceed (or fall below) normally expected levels.

2.a) Since approximately 2000, when was your facility negatively affected by **extreme temperatures or heat / cold waves**?
Please list date(s) of significant or memorable events in the text box below.

2.b) For the most severe incident, what assets or activities were affected/disrupted **on site**?

- ☐ Outdoor activities or other health effects
- ☐ Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- ☐ Energy infrastructure / supply
- ☐ Telecommunications / computing / data systems
- ☐ Roads or other onsite transportation systems
- ☐ Water infrastructure / supply
- ☐ Wastewater infrastructure / processing
- ☐ Buildings (shell, contents, or major components, e.g., HVAC)
- ☐ Environmental assets (e.g., training areas, buffer zones, monitoring equipment)
- ☐ Previously remediated sites or ongoing remediation activities (e.g., mercury or other contaminants released during flooding, landfill cap integrity, monitoring station damage)

- [ ] Other (Please specify in the space provided)
- [ ] None

2.c) For this incident, what assets or activities were affected/disrupted **in the surrounding community**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply
- [ ] Telecommunications / computing / data systems
- [ ] Transportation systems
- [ ] Water infrastructure / supply
- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.d) How long was your facility's ability to achieve its mission interrupted for this incident?
Briefly describe the overall impact in the space provided.

- ○ Not at all
- ○ A few hours
- ○ One day
- ○ Several days
- ○ One week
- ○ More than one week

2.e) Which of the following options best describes recovery after the event? *Please select only one*.

	Expeditious	Slow
Better than pre-event	☐	☐
Same as pre-event	☐	☐
Worse than pre-event	☐	☐

2.f) Did the event lead to changes to disaster preparedness, infrastructure planning, or site management?

- [ ] No significant changes made
- [ ] Modified facilities / infrastructure
- [ ] Updated site disaster management / continuity [or similar] plans
- [ ] Coordinated disaster planning with surrounding community
- [ ] Other (Please specify in the space provided)

Part 2: Impacts (Drought)

Part 2: Drought

A period of abnormally dry weather long enough to cause a serious hydrological imbalance.

2.a) Since approximately 2000, when was your facility negatively affected by **drought**?
Please list date(s) of significant or memorable events in the text box below.

2.b) For the most severe incident, what assets or activities were affected/disrupted **on site**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply
- [ ] Telecommunications / computing / data systems
- [ ] Roads or other onsite transportation systems
- [ ] Water infrastructure / supply
- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones)
- [ ] Previously remediated sites or ongoing remediation activities (e.g., mercury or other contaminants released during flooding, landfill cap integrity, monitoring station damage)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.c) For this incident, what assets or activities were affected/disrupted **in the surrounding community**?

- ☐ Outdoor activities or other health effects
- ☐ Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- ☐ Energy infrastructure / supply
- ☐ Telecommunications / computing / data systems
- ☐ Transportation systems
- ☐ Water infrastructure / supply
- ☐ Wastewater infrastructure / processing
- ☐ Buildings (shell, contents, or major components, e.g., HVAC)
- ☐ Environmental assets (e.g., training areas, buffer zones, monitoring equipment)
- ☐ Other (Please specify in the space provided)
- ☐ None

2.d) How long was your facility's ability to achieve its mission interrupted for this incident?
Briefly describe the overall impact in the space provided.

- ○ Not at all
- ○ A few hours
- ○ One day
- ○ Several days
- ○ One week
- ○ More than one week

2.e) Which of the following options best describes recovery after the event? *Please select only one.*

	Expeditious	Slow
Better than pre-event	☐	☐
Same as pre-event	☐	☐
Worse than pre-event	☐	☐

2.f) Did the event lead to changes to disaster preparedness, infrastructure planning, or site management (if any):

- [ ] No significant changes made
- [ ] Modified facilities / infrastructure
- [ ] Updated site disaster management / continuity [or similar] plans
- [ ] Coordinated disaster planning with surrounding community
- [ ] Other (Please specify in the space provided)

Part 2: Impacts (Wildfire)

Part 2: Wildfire

An uncontrolled, extensive fire that burns vegetation and spreads rapidly to pose a risk to life and infrastructure.

2.a) Since approximately 2000, when was your facility negatively affected by **wildfire**?
Please list date(s) of significant or memorable events in the text box below.

2.b) For the most severe incident, what assets or activities were affected/disrupted **on site**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply
- [ ] Telecommunications / computing / data systems
- [ ] Roads or other onsite transportation systems
- [ ] Water infrastructure / supply
- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones, monitoring equipment)
- [ ] Previously remediated sites or ongoing remediation activities (e.g., mercury or other contaminants released during flooding, landfill cap integrity, monitoring station damage)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.c) For this incident, what assets or activities were affected/disrupted **in the surrounding community**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply
- [ ] Telecommunications / computing / data systems
- [ ] Transportation systems
- [ ] Water infrastructure / supply
- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.d) How long was your facility's ability to achieve its mission interrupted for this incident?
Briefly describe the overall impact in the space provided.

- ○ Not at all
- ○ A few hours
- ○ One day
- ○ Several days
- ○ One week
- ○ More than one week

2.e) Which of the following options best describes recovery after the event? *Please select only one*.

	Expeditious	Slow
Better than pre-event	☐	☐
Same as pre-event	☐	☐
Worse than pre-event	☐	☐

2.f) Did the event lead to changes to disaster preparedness, infrastructure planning, or site management (if any):

- [ ] No significant changes made
- [ ] Modified facilities / infrastructure

- [ ] Updated site disaster management / continuity [or similar] plans
- [ ] Coordinated disaster planning with surrounding community
- [ ] Other (Please specify in the space provided)

Part 2: Impacts (Storms)

Part 2: Storms

This category includes tropical cyclones, extra-tropical (or mid-latitude) cyclones, tornadoes, thunderstorms, and windstorms characterized by some of the following: intense precipitation, powerful/destructive winds, and lightning. Storms can pose risks to infrastructure, operations, and health/safety because of their intensity, duration, or directionality.

2.a) Since approximately 2000, when was your facility negatively affected by **storms**?
Please list date(s) of significant or memorable events in the text box below.

2.b) For the most severe incident, what assets or activities were affected/disrupted **on site**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply
- [ ] Telecommunications / computing / data systems
- [ ] Roads or other onsite transportation systems
- [ ] Water infrastructure / supply
- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones, monitoring equipment)
- [ ] Previously remediated sites or ongoing remediation activities (e.g., mercury or other contaminants released during flooding, landfill cap integrity, monitoring station damage)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.c) For this incident, what assets or activities were affected/disrupted **in the surrounding community**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply
- [ ] Telecommunications / computing / data systems
- [ ] Transportation systems
- [ ] Water infrastructure / supply
- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.d) How long was your facility's ability to achieve its mission interrupted for this incident?
Briefly describe the overall impact in the space provided.

- ○ Not at all
- ○ A few hours
- ○ One day
- ○ Several days
- ○ One week
- ○ More than one week

2.e) Which of the following options best describes recovery after the event? *Please select only one*.

	Expeditious	Slow
Better than pre-event	☐	☐
Same as pre-event	☐	☐
Worse than pre-event	☐	☐

2.f) Did the event lead to changes to disaster preparedness, infrastructure planning, or site management:

- [ ] No significant changes made
- [ ] Modified facilities / infrastructure
- [ ] Updated site disaster management / continuity [or similar] plans

- [ ] Coordinated disaster planning with surrounding community
- [ ] Other (Please specify in the space provided)

Part 2: Impacts (Snow Ice)

Part 2: Snow / ice storms

Abnormal accumulation of snow and/or ice that poses risks to transportation, utilities, or other infrastructure.

2.a) Since approximately 2000, when was your facility negatively affected by **snow / ice storms**?
Please list date(s) of significant or memorable events in the text box below.

2.b) For the most severe incident, what assets or activities were affected/disrupted **on site**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply
- [ ] Telecommunications / computing / data systems
- [ ] Roads or other onsite transportation systems
- [ ] Water infrastructure / supply
- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones, monitoring equipment)
- [ ] Previously remediated sites or ongoing remediation activities (e.g., mercury or other contaminants released during flooding, landfill cap integrity, monitoring station damage)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.c) For this storm, what assets or activities were affected/disrupted **in the surrounding community**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply

- [ ] Telecommunications / computing / data systems
- [ ] Transportation systems
- [ ] Water infrastructure / supply
- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.d) How long was your facility's ability to achieve its mission interrupted for this incident?

- ○ Not at all
- ○ A few hours
- ○ One day
- ○ Several days
- ○ One week
- ○ More than one week

2.e) Which of the following options best describes recovery after the event? *Please select only one.*

	Expeditious	Slow
Better than pre-event	☐	☐
Same as pre-event	☐	☐
Worse than pre-event	☐	☐

2.f) Did the event lead to changes to disaster preparedness, infrastructure planning, or site management:

- [ ] No significant changes made
- [ ] Modified facilities / infrastructure
- [ ] Updated site disaster management / continuity [or similar] plans
- [ ] Coordinated disaster planning with surrounding community
- [ ] Other (Please specify in the space provided)

Part 2: Coastal flooding

High water that occurs at the coasts of large bodies of water as a result of tides, weather systems, and sea level, usually defined in terms of hourly values observed.

2.a) Since approximately 2000, when was your facility negatively affected by **coastal flooding**?
Please list date(s) of significant or memorable events in the text box below.

2.b) For the most severe incident, what assets or activities were affected/disrupted **on site**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply
- [ ] Telecommunications / computing / data systems
- [ ] Roads or other onsite transportation systems
- [ ] Water infrastructure / supply
- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones)
- [ ] Previously remediated sites or ongoing remediation activities (e.g., mercury or other contaminants released during flooding, landfill cap integrity, monitoring station damage)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.c) For this incident, what assets or activities were affected/disrupted **in the surrounding community**?

- [ ] Outdoor activities or other health effects
- [ ] Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- [ ] Energy infrastructure / supply
- [ ] Telecommunications / computing / data systems
- [ ] Transportation systems
- [ ] Water infrastructure / supply

- [ ] Wastewater infrastructure / processing
- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones, monitoring equipment)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.d) How long was your facility's ability to achieve its mission interrupted for this incident?
Briefly describe the overall impact in the space provided.

- ○ Not at all
- ○ A few hours
- ○ One day
- ○ Several days
- ○ One week
- ○ More than one week

2.e) Which of the following options best describes recovery after the event? *Please select only one*.

	Expeditious	Slow
Better than pre-event	☐	☐
Same as pre-event	☐	☐
Worse than pre-event	☐	☐

2.f) Did the event lead to changes to disaster preparedness, infrastructure planning, or site management:

- [ ] No significant changes made
- [ ] Modified facilities / infrastructure
- [ ] Updated site disaster management / continuity [or similar] plans
- [ ] Coordinated disaster planning with surrounding community
- [ ] Other (Please specify in the space provided)

Part 2: Impacts (Compound Events)

Part 2: Compound events

Two or more extreme events occurring simultaneously or successively, or events that are not individually extreme but lead to extreme conditions when they co-occur.

2.a) Since approximately 2000, when was your facility negatively affected by **compound events**?
Please list date(s) of significant or memorable events in the text box below.

2.b) For the most severe incident, what assets or activities were affected/disrupted **on site**?

- ☐ Outdoor activities or other health effects
- ☐ Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- ☐ Energy infrastructure / supply
- ☐ Telecommunications / computing / data systems
- ☐ Roads or other onsite transportation systems
- ☐ Water infrastructure / supply
- ☐ Wastewater infrastructure / processing
- ☐ Buildings (shell, contents, or major components, e.g., HVAC)
- ☐ Environmental assets (e.g., training areas, buffer zones)
- ☐ Previously remediated sites or ongoing remediation activities (e.g., mercury or other contaminants released during flooding, landfill cap integrity, monitoring station damage)
- ☐ Other (Please specify in the space provided)
- ☐ None

2.c) For this incident, what assets or activities were affected/disrupted **in the surrounding community**?

- ☐ Outdoor activities or other health effects
- ☐ Staff productivity (e.g., increased absences, diversion from normal tasks, etc.)
- ☐ Energy infrastructure / supply
- ☐ Telecommunications / computing / data systems
- ☐ Transportation systems
- ☐ Water infrastructure / supply
- ☐ Wastewater infrastructure / processing

- [ ] Buildings (shell, contents, or major components, e.g., HVAC)
- [ ] Environmental assets (e.g., training areas, buffer zones, monitoring equipment)
- [ ] Other (Please specify in the space provided)
- [ ] None

2.d) How long was your facility's ability to achieve its mission interrupted for this incident?
Briefly describe the overall impact in the space provided.

- ○ Not at all
- ○ A few hours
- ○ One day
- ○ Several days
- ○ One week
- ○ More than one week

2.e) Which of the following options best describes recovery after the event? *Please select only one*.

	Expeditious	Slow
Better than pre-event	☐	☐
Same as pre-event	☐	☐
Worse than pre-event	☐	☐

2.f) Did the event lead to changes to disaster preparedness, infrastructure planning, or site management:

- [ ] No significant changes made
- [ ] Modified facilities / infrastructure
- [ ] Updated site disaster management / continuity [or similar] plans
- [ ] Coordinated disaster planning with surrounding community
- [ ] Other (Please specify in the space provided)

Part 3: Questions related to this DOE SPO survey

Part 3: Questions related to this DOE SPO survey

3.a) Does the information collected in this survey duplicate any data bases, management systems, or other surveys? *If so, please specify in space provided.*

- ◯ Yes
- ◯ No

3.b) How many person hours did it take to gather the information and complete the survey?

- ◯ 1 hour or less
- ◯ Around 4 hours
- ◯ Around 8 hours
- ◯ Longer than 8 hours

3.c) How many people were involved?

- ◯ 1 person
- ◯ 5 or fewer people
- ◯ 10 or fewer people
- ◯ more than 11 people

3.d) How many office/administrative entities were involved?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ More than 5

3.e) What sources of data did you use, if any?

- ☐ Public information (e.g., newspapers)
- ☐ Public works/maintenance records
- ☐ Security records
- ☐ Financial records
- ☐ Meteorological data
- ☐ Other (Please specify in the space provided)

3.f) What would you do to improve the survey?

Attachment F

Reporting Inconsistencies Between LM Data and Provided Data

This page intentionally left blank

Reporting Inconsistencies between LM Data and Provided Data

Energy

Baseline Data

FIMS data and previously EMS4 data was pulled to determine the gross square footage (GSF) for energy use in the baseline year (2003) for the CEDR/Dashboard data.

LM stood up as an Office in DOE at the end of 2003. Most (if not all) of the sites that came to LM during that first year were previously owned by other DOE Offices. LM does not have the historic data. It is unclear whether the information for the buildings/sites used in the baseline is correct and/or complete.

Subsequent Year Data

In subsequent years, SPO/FEMP provided guidance that occasionally varied from year to year as to which buildings should be included in the GSF reporting. These variations have caused differences in GSF reporting for the same buildings.

Water

Baseline Data

FIMS data is pulled for the CEDR/Dashboard to determine the GSF for annual reporting. According to DOE Supplemental Guidance, the square footage reported for a building or other facility subject to both the energy and water requirements will rely on the value reported for the energy use of that facility.

The legacy sites that LM manages are atypical; we have OSFs and buildings that contribute to our GSF. Some of the structures may use: energy but not water, water but not energy, both water and energy, neither water nor energy. Therefore, the assumed use of the energy GSF for water GSF skews the data. LM has been providing GSF associated with the structures that use water.

Subsequent Year Data

Same as for baseline Data.

E-85 Fuel Usage

Baseline Data

Fuel data is pulled from FAST for inclusion in the SPO provided data (CEDR or Dashboard). In 2005 (i.e. baseline year) the guidelines for FAST were as follows: Estimate the total amount of fuel used in your alternative fuel vehicle (AFV) Fleet for the listed year. Include conventional fuel and diesel and any alternative fuels in the estimate. All fuel consumed in E85 capable vehicles was reported in FAST as E85 fuel. This shows as 3,617 gallons of E85 in the SPO report.

Based on LM tracking data, LM consumed zero gallons of alternative fuels in the baseline year of 2005. Therefore, the FAST data for the 2005 baseline is an overestimation; comparison of subsequent years to the FAST baseline results in reduced increases. (Note: when LM calculates changes in usage based on our tracking data, percentage calculations cannot be performed with zero as a denominator. To avoid this problem, LM utilizes a 2005 baseline of 1 gallon.)

Subsequent Year Data

No issues.