LMS/S07225

FY 2021
LM Site Sustainability Plan

December 2020

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Department of Energy
Washington, DC 20585

December 22, 2020

MEMORANDUM FOR SUSTAINABILITY PERFORMANCE DIVISION

FROM: PETER O'KONSKI, David S. Shafer, PHD for Peter O'Konski
DEPUTY DIRECTOR
OFFICE OF LEGACY MANAGEMENT

SUBJECT: Concurrence of Fiscal Year (FY) 2021 Site Sustainability Plan (SSP) for Department of Energy Office of Legacy Management (2020)

The U.S. Department of Energy Office of Legacy Management (LM) has prepared and is submitting the *Fiscal Year 2021 Site Sustainability Plan* (SSP) via the DOE Sustainability Performance Divisions Dashboard to meet the intent of DOE Order 436.1 and in accordance with the U.S. Department of Energy Sustainability Performance Division *Fiscal Year 2021 Site Sustainability Plan Guidance Document*.

I concur the FY 2021 Site Sustainability Plan, which is being submitted through the Dashboard and represents LM's sustainability performance during FY 2020 and commitment to LM's proposed sustainability activities in future years.

Please contact Tracy Ribeiro at (303) 410-4817, or Tracy.Ribeiro@lm.doe.gov, if you have any questions.

Attachment

cc via email:
Tracy Ribeiro, DOE-LM
DOE Read File
File: FED/20/38

2021 LM Site Sustainability Plan
Document History

Date	Description of Changes
December 2020	Updated to include fiscal year 2020 performance and fiscal year 2021 planned activities.
December 2019	Updated to include fiscal year 2019 performance and fiscal year 2020 planned activities.
December 2018	Updated to include fiscal year 2018 performance and fiscal year 2019 planned activities.
December 2017	Updated to include fiscal year 2017 performance and fiscal year 2018 planned activities.

Contents

Tables

Attachments

Abbreviations

AFFECT	Assisting Federal Facilities with Energy Conservation Technologies
AFV	alternative fuel vehicle
ANL	Argonne National Laboratory
C&D	construction and demolition material and debris
COOP	Continuity of Operations
DCOI	Data Center Optimization Initiative
DOE	U.S. Department of Energy
E85	ethanol fuel blend
EAM	Enterprise Asset Management
ECM	efficiency and conservation measure
EISA	Energy Independence and Security Act
EM	Emergency Management
EMS	Environmental Management System
EPA	U.S. Environmental Protection Agency
EPEAT	Electronic Product Environmental Assessment Tool
FAST	Federal Automotive Statistical Tool
FDCCI	Federal Data Center Consolidation Initiative
FEMP	Federal Energy Management Program
FY	fiscal year
GAO	U.S. Government Accountability Office
GHG	greenhouse gas
GP	Guiding Principle
GSA	U.S. General Services Administration
GSF	gross square feet
HEPA	high-efficiency particulate air
HPSB	High Performance Sustainable Buildings
HVAC	heating, ventilation, and air conditioning
ILA	industrial, landscaping, and agricultural
ISO	International Organization for Standardization
IT	Information Technology
LEED	Leadership in Energy and Environmental Design
LM	Office of Legacy Management

LMBC	LM Business Center
LMS	Legacy Management Support
LOA	letter of agreement
MAA	mutual aid agreement
MOA	memorandum of agreement
MOU	memorandum of understanding
M&V	measurement and verification
PAE	Project or Activity Evaluation
PL	Public Law
PMO	Program Management Office
PUE	power utilization effectiveness
REC	renewable energy credit
RTC	Riverview Technology Corporation
SF6	sulfur hexafluoride
SOARS	System Operation and Analysis at Remote Sites
SOW	statement of work
SPD	Sustainability Performance Division
SSO	Site Sustainability Plan
TRN	Technical Resilience Navigator
USDA	U.S. Department of Agriculture
UVC	ultraviolet-C radiation
WI	water intensity
WMP2	Waste Minimization and Pollution Prevention
YOY	year over year

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Executive Summary

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is committed to enhancing sustainable environmental performance. As identified in the LM *2016–2025 Strategic Plan*, LM has the following overarching goals:

1. Protect human health and the environment
2. Preserve, protect, and share records and information
3. Safeguard former contractor workers' retirement benefits
4. Sustainably manage and optimize the use of land and assets
5. Sustain management excellence
6. Engage the public, governments, and interested parties

Underlying these overarching goals are LM's triple-bottom-line activities that focus on:

- **Social responsibility:** LM focuses on the safety of staff, the public, and the environment with communication playing an important part.
- **Economic prosperity:** LM promotes business excellence by being fiscally responsible and using best business practices.
- **Environmental stewardship:** LM consults with regulatory agencies and other stakeholders regarding its compliance with environmental laws, regulations, and agreements; its support of environmental justice; and its general consideration of the environmental impacts of all work being performed.

This Site Sustainability Plan (SSP) for fiscal year (FY) 2021 describes how LM was faced with many new challenges during the FY 2020 reporting period due to the COVID-19 pandemic. Beginning in March 2020, LM commenced minimum safe operations as a result of the spread of the COVID-19 pandemic. As a result, LM and the Legacy Management Support (LMS) contractor personnel reduced onsite staffing to a minimum number necessary to ensure the safety and security of LM sites and facilities and to execute a limited number of mission-critical activities. All other onsite and field activities were temporarily halted. Thus, LM and LMS office staffing was reduced significantly as most staff transitioned to maximum telework.

During this time, LM and the LMS contractor developed the *LM and LMS Recovery Plan* to allow resumption of onsite activities, while protecting its workforce and recognizing and adhering to the various federal, state, tribal and local orders regarding COVID-19. These orders varied from state to state and from city to city. The joint *LM and LMS Recovery Plan* identifies the various steps in which limited operations can resume based upon a variety of factors.

Despite the new challenges of safely responding to a worldwide pandemic, LM met or exceeded all sustainability goals except waste diversion during the reporting period, including:

- 98% of LM's electronic equipment is Electronic Product Environmental Assessment Tool (EPEAT) ranked gold or silver.
- LM was awarded the EPEAT Green Purchaser award for the fifth consecutive year.

- LM reduced its potable water intensity by 8% in FY 2020 compared to FY 2019.
- 96.8% of LM's construction and demolition material and debris (C&D) was diverted from landfills. This is mostly attributed to a well-planned and implemented project at the Weldon Spring, Missouri, Site administrative building project.

Summary Table of Goals/Targets

LM's reporting consists of both the FY 2020 performance data entry in the DOE Sustainability Dashboard, hereafter referred to as the Dashboard, and this FY 2021 SSP (see Table ES-1).

Note

In Table ES-1, "N/A" (not applicable) indicates that the previous year's goal is not addressed in DOE's Fiscal Year 2021 Site Sustainability Plan Guidance.

Table ES-1. Goal Summary Table

Prior DOE Goal	Current Performance Status	Planned Actions & Contribution	Overall Risk of Non-Attainment
Energy Management			
30% energy intensity (Btu per gross square foot) reduction in goal-subject buildings by FY 2015 from a FY 2003 baseline and 1.0% YOY thereafter.	LM exceeded this goal. LM reduced energy intensity by 1.3% compared to FY 2019.	LM will continue to pursue projects that will further reduce its energy intensity, including replacing current grid electricity with renewable sources and purchasing bundled electricity where it is cost-effective.	Low
EISA Section 432 continuous (4-year cycle) energy and water evaluations.	LM met this goal. Scheduled energy evaluations were performed at the Fernald Preserve, OH, Site and the Weldon Spring, MO, Site, and water evaluations were performed at the Tuba City, AZ, Disposal Site.	Continue the 4-year cycle of conducting energy and water evaluations on appropriate buildings.	Low
Meter all individual buildings for electricity, natural gas, steam, and water, where cost-effective and appropriate.	LM met this goal. All required buildings are metered.	Continue to meet metering requirements. Ensure that buildings entering LM are metered appropriately.	Low

Table ES-1. Goal Summary Table (continued)

Prior DOE Goal	Current Performance Status	Planned Actions & Contribution	Overall Risk of Non-Attainment
Water Management			
20% potable water intensity (Gal per gross square foot) reduction by FY 2015 from a FY 2007 baseline and 0.5% YOY thereafter.	LM exceeded this goal. LM reduced its potable water intensity by 97.3% compared to the baseline year of FY 2007. LM reduced its potable water intensity by 8% in FY 2020 compared to FY 2019. LM will ensure current practices to reduce potable water intensity are maintained and will work toward reducing potable water intensity.	LM will ensure current practices to reduce potable water intensity are maintained and will work toward reducing potable water intensity.	Low
Non-potable freshwater consumption (Gal) reduction of industrial, landscaping, and agricultural (ILA). YOY reduction; no set target.	LM reduced ILA water use by 99.5% compared to the baseline year of FY 2010.	LM will ensure current practices to reduce ILA water use are maintained and will work toward reducing ILA water use.	Low
Waste Management			
Reduce at least 50% of non-hazardous solid waste, excluding construction and demolition debris, sent to treatment and disposal facilities.	LM did not meet this goal. 28.8% of this type of waste was diverted from treatment and landfills in FY 2020.	LM will continue to promote waste minimization and will reduce, recycle, and compost nonhazardous solid waste, excluding C&D, on LM projects and at LM sites to divert the waste from landfills.	Medium
Reduce construction and demolition materials and debris sent to treatment and disposal facilities. YOY reduction; no set target.	LM exceeded this goal. As compared to FY 2019, LM sent almost 10 times less C&D waste to landfills in FY 2020.	LM will continue to promote waste minimization and will reduce, reuse, recycle, and compost C&D on LM projects and at LM sites to divert the waste from landfills.	Medium
Fleet Management			
20% reduction in annual petroleum consumption by FY 2015 relative to a FY 2005 baseline and 2.0% YOY thereafter.		LM will encourage use of E85 vehicles, trip consolidation, and video conferencing to help reduce conventional fuel use. However, lack of alternative fuel infrastructure negatively impacts this goal.	High
10% increase in annual alternative fuel consumption by FY 2015 relative to a FY 2005 baseline; maintain 10% increase thereafter.		LM will encourage use of E85 vehicles, trip consolidation, and video conferencing to help reduce conventional fuel use. However, lack of alternative fuel infrastructure negatively impacts this goal.	High
75% of light duty vehicle acquisitions must consist of alternative fuel vehicles (AFV).		Based upon current mission, LM will continue to evaluate AFVs for light-duty vehicles. Lack of alternative fueling infrastructure will negatively impact the goal going forward. If infrastructure is available and in close proximity, LM will assess purchasing AFVs.	High

Table ES-1. Goal Summary Table (continued)

Prior DOE Goal	Current Performance Status	Planned Actions & Contribution	Overall Risk of Non-Attainment
Clean & Renewable Energy			
"Renewable Electric Energy" requires that renewable electric energy account for not less than 7.5% of a total agency electric consumption by FY 2013 and each year thereafter.	100% of LM's energy use was from renewable sources or covered by the purchase of RECs.	LM will operate and maintain existing renewable energy systems, pursue installation of new renewable energy systems where cost-effective and allowed under the site agreements, and continue to purchase RECs.	Low
Continue to increase non-electric thermal usage. YOY increase; no set target but an indicator in the OMB scorecard.	Thermal sources are a negligible part of LM energy use. LM has no operational non-electric thermal installations.	LM has no operational non-electric thermal installations. The majority of LM's energy use is from electricity. LM will investigate non-electric thermal options when new energy projects are being developed.	High
Green Buildings			
At least 15% (by count) of owned existing buildings to be compliant with the revised Guiding Principles for Sustainable Buildings by FY 2021, with annual progress thereafter.	LM exceeded this goal. 50% of its buildings comply with the 2016 GPs.	LM will continue assessing buildings greater than 10,000 GSF for their potential to achieve the GPs.	Low
Acquisition & Procurement			
Promote sustainable acquisition and procurement to the maximum extent practicable, ensuring BioPreferred and biobased provisions and clauses are included in all applicable contracts.	All applicable solicitations issued and resultant contracts included the appropriate provisions and clauses.	All applicable solicitations issued and resultant contracts will include the appropriate provisions and clauses.	Low
Measures, Funding, & Training			
Site set annual targets for sustainability investment with appropriated funds and/or financed contracts for implementation.	There was no target applicable for FY 2020. LM did not implement any performance contracts.	LM will continue to evaluate new projects for ESPC initiatives during the planning process.	High
Electronic Stewardship			
End of Life: 100% of used electronics are reused or recycled using environmentally sound disposition options each year.	LM met this goal. 100% of used electronics were dispositioned using approved environmentally sound methods in FY 2020.	Continue to execute established plans and procedures to manage used electronics using approved environmentally sound methods.	Low
Data Center Efficiency: Establish a power usage effectiveness target for new and existing data centers; discuss efforts to meet targets.		LM will monitor and maintain the power usage effectiveness ratio within the target range.	Low

Table ES-1. Goal Summary Table (continued)

Prior DOE Goal	Current Performance Status	Planned Actions & Contribution	Overall Risk of Non-Attainment
Organizational Resilience			
Discuss overall integration of climate resilience in emergency response, workforce, and operations procedures and protocols.	Discuss overall integration of climate resilience in emergency response, workforce, and operations procedures and protocols.	Discuss overall integration of climate resilience in emergency response, workforce, and operations procedures and protocols.	Discuss overall integration of climate resilience in emergency response, workforce, and operations procedures and protocols.
Multiple Categories			
YOY Scope 1 & 2 GHG emissions reduction from a FY 2008 baseline.	Scope 1 & 2 GHG emission data is not currently available so performance toward meeting this goal cannot be assessed. However, it is very likely that this YOY reduction goal will be met for FY 2020 because of the reductions in the types of Scope 1 travel that occurred as a result of LM's response to COVID-19 pandemic.	Continue to execute established plans and procedures to reduce the various sources of Scope 1 & 2 GHG emissions.	Medium
YOY Scope 3 GHG emissions reduction from a FY 2008 baseline.	Federal travel data is not currently available so performance toward meeting this goal cannot be assessed. However, it is very likely that this YOY reduction goal will be met for FY 2020 because of the reductions in the types of Scope 3 travel that resulted from LM's response to COVID-19 pandemic.	Continue to execute established plans and procedures to reduce the various sources of Scope 3 GHG emissions.	Medium

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

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1.0 Mission Change

By the start of fiscal year (FY) 2030, the U.S. Department of Energy (DOE) Office of Legacy Management (LM) is projected to assume responsibility for 27 additional legacy sites. Potential future activities include management of the Manhattan Project National Historical Park sites. LM also took responsibility for the DOE historian position in FY 2020. LM will take responsibility for managing historic records, which will be relocated from Germantown, Maryland, to the LM Business Center in Morgantown, West Virginia. As LM receives more sites and additional scope, it will employ more workers, occupy more workspace, operate more vehicles, conduct more travel, consume more fuel, purchase more personal property, and generate more waste. Conditions of sites at transfer could vary greatly, making it difficult to predict their impact on meeting the sustainability goals and targets stated in this LM Site Sustainability Plan. LM will monitor the impacts to meeting sustainability goals and targets as new sites are added and scope increases, and LM will adjust its Environmental Management System accordingly.

2.0 Energy Management

Energy management covers the U.S. Department of Energy (DOE) Office of Legacy Management (LM) approach and vision for addressing energy intensity, Energy Independence and Security Act (EISA) Section 432 benchmarking, facility metering, and nonfleet fuel use.

2.1 Energy Intensity

2.1.1 Energy Intensity Performance Status

In fiscal year (FY) 2020, LM exceeded the 1% year over year energy intensity reduction target. LM reduced energy intensity by 1.3% compared to FY 2019.

The COVID-19 pandemic affected energy usage at LM sites due to limited operations and extensive teleworking by employees. Energy use was down at most sites from March through the end of the fiscal year. Energy use slowly increased as more workers returned to work at the office and as air purification systems were installed. Ultraviolet air purification systems were being installed into central air handling systems where they could be retrofitted. In areas where the central systems could not be installed, individual air purification units were being deployed in employee offices.

As best management practices, LM utilizes the following techniques and tools:

- Remote auditing
- Remote access to building energy usage using the System Operation and Analysis at Remote Sites (SOARS) system
- Benchmarking utility usage and costs using Portfolio Manager
- U.S. General Services Administration square footage guidance for designing office and cubicle space

A major change at the Weldon Spring, Missouri, Site resulted in restructuring the Weldon Spring power distribution system, resulting in reduced energy usage and costs. Oversized LM-owned transformers were replaced with appropriately sized utility-owned transformers, and 1-phase service replaced 3-phase service where appropriate, such as in the Leachate Building. Metering was placed on the load side of the distribution transformers rather than on the line side. This resulted in LM no longer being billed for energy losses through transformers.

The Environmental Management System (EMS) Energy Team, in coordination with the EMS Sustainable Buildings Team, began training eight people on the DOE 50001 Ready Program (which is based on International Organization for Standardization [ISO] guidelines) and began a gap analysis to help discover differences between the 50001 Ready Program and LM's EMS program. This will be completed in FY 2021.

2.1.2 Energy Intensity Planned Actions and Projected Performance

Energy use that decreased during the limited operations and increased teleworking because of the COVID-19 pandemic is expected to slowly increase to more normal levels. Energy use increases will be affected by the number of people that continue teleworking and the number of air purification units installed in office central air handling systems and in individual offices. LM will continue to explore ways to reduce energy usage in existing buildings and will purchase bundled green electricity when available and practical. LM will perform the following planned activities to and identify energy savings in FY 2021 and beyond:

- Continue planning for a new LM-owned campus at the LM office at Grand Junction, Colorado, to relocate office space from older, less energy-efficient leased buildings.
- Assess deferred maintenance and repair activities that were identified in condition assessment surveys, to see if opportunities exist to increase energy efficiency while improving asset condition.
- Complete the consolidation of the current Weldon Spring Site Interpretive Center and office trailer activities into the new more energy-efficient Interpretive Center.
- The expected impact of these planned activities is identification of activities that could reduce energy usage and associated Scope 1, 2, and 3 greenhouse gas (GHG) emissions if implemented. No additional funding is required to conduct these sustainability actions beyond what is currently budgeted.
- Measurable goals and milestones for FY 2021 and beyond include the following:
- Complete 50001 Ready Program training for the eight people enrolled
- Complete EMS and ISO 50001 gap analysis
- Work with the Information Technology group and the EMS Sustainable Buildings Team to develop a pilot of an energy dashboard to communicate LM energy use performance and goals to LM and Legacy Management Support (LMS) employees
- Prepare the annual LM site energy comparison report, which provides historical energy information for LM buildings and facilities so that LMS site leads can make informed decisions on energy-related projects
- Ensure that the new Interpretive Center at the Weldon Spring site has advanced metering, either through the utility meter or a SOARS meter

2.2 EISA Evaluations

2.2.1 EISA Evaluations Performance Status

- LM completed 100% of the required EISA Section 432 energy evaluations in FY 2020. The energy evaluations were conducted for the Fernald Preserve, Ohio, Site and the Weldon Spring site.
- Due to restrictions put in place in response to the COVID-19 pandemic, the scheduled water evaluations were delayed. During the reporting period, field work was limited to mission-critical activities only, and maximum telework policies went into effect in mid-March.
- LM does not have any buildings that fit the requirements for re-/retro-commissioning or continuous commissioning. In addition, LM does not have any projects funded through Energy Savings Performance Contracts, which means LM is not statutorily required to perform measurement and verification (M&V). However, LM performed M&V on conservation measures during EISA Section 432 evaluations.
- As a best management practice, LM uses the U.S. Environmental Protection Agency's (EPA's) Portfolio Manager to benchmark all LM-owned and LM-leased buildings that are not excluded. The excluded building certification letter dated November 10, 2020, was uploaded to the DOE Sustainability Dashboard.
- Water meters are installed at all Goal Metrics sites where it has been proven to be cost-effective to ensure accurate water use reporting and leak detection. Meter readings are documented on a monthly basis by site personnel and tracked in a spreadsheet that is accessible to all responsible team members.
- As a best management practice, LM considers ways it can reduce, reuse, and recycle potable water and industrial, landscaping, and agricultural (ILA) water with project-planning tools such as Project or Activity Evaluations and statements of work.

2.2.2 EISA Evaluations Planned Actions and Projected Performance

- LM will continue to conduct EISA energy and water evaluations at its sites on a rotating basis, as shown in Table 1. The expected impact of these planned activities will be to ensure that 100% of LM sites are evaluated every 4 years to meet the requirements of EISA Section 432. In addition, evaluations provide energy information to LMS site leads so they can make informed decisions on implementing possible energy conservation measures. Future EISA evaluations are not expected to be delayed due the COVID-19 pandemic. Desktop evaluations will be performed. No additional funding is required to conduct the evaluations beyond what is currently budgeted.

Planned actions and their measurable goals and milestones for FY 2021 and beyond include the following:

- Continue to conduct EISA energy and water evaluations at LM sites on a rotating basis, as shown in Table 1. These evaluations will be conducted remotely using the SOARS system or by using personnel on the site, when possible.
- Continue to perform M&V when possible on conservation measures during EISA Section 432 evaluations.

- Coordinate condition assessments and energy evaluations when feasible. Condition assessments are required every 5 years, while energy and water evaluations are required every 4 years, so coordination is not normally feasible.

Table 1. Planned EISA Section 432 Evaluations

Planned EISA Section 432 Evaluations		
Year[a]	**Energy Evaluations**	**Water Evaluations**
2021	Monticello, UT, Disposal and Processing Sites Monument Valley, AZ, Processing Site Shiprock, NM, Disposal Site	Grand Junction, CO, Disposal/Processing Site (P) Fernald Preserve, OH, Site (P) Monticello, UT, Disposal and Processing Sites (P)
2022	LM Business Center at Morgantown, WV Tuba City, AZ, Disposal Site LM Office at Westminster, CO	Tuba City, AZ, Disposal Site (P)
2023	Mound, OH, Site Pinellas County, FL, Site	Weldon Spring, MO, Site (P)
2024	Fernald Preserve, OH, Site Weldon Spring, MO, Site	Fernald Preserve, OH, Site (P/ILA) Monticello, UT, Disposal and Processing Sites (P)

Note:
[a] EISA cycle year runs from June to May. Current 4-year cycle is 2020 to 2023.

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

2.3 Metering Status

2.3.1 Metering Status Performance Status

All of LM's required buildings are metered. As a best management practice, LM does not meter buildings that fall below size requirements because it is not cost-effective.

2.3.2 Metering Status Planned Actions and Projected Performance

LM will continue metering buildings where it is cost-effective. LM will perform the following planned activities in FY 2021 and beyond:

- On a periodic basis, evaluate local utility companies' implementation of EPA's Green Button initiative
- Add metering to buildings where it is cost-effective
- Review forthcoming revised DOE metering guidance and perform a gap analysis against the current LM metering plan

Measurable goals and milestones for FY 2021include the following:

- Evaluate metering needs for new sites and buildings in the LM portfolio
- Install separate metering in both of its data centers located at the LM Business Center at Morgantown, West Virginia, and at the LM office at Grand Junction
- Provide annual utility usage and interpretation of the usage to LMS site and facility leads so they can see utility performance and make changes, if cost-effective, to improve efficiency

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

2.4 NonFleet Vehicles and Equipment

2.4.1 NonFleet Vehicles and Equipment Performance Status

LM nonfleet and equipment fuel usage is highly variable from year to year, depending on project work. Usage increased almost 109% from FY 2019 and associated GHG emissions increased by 143%.

2.4.2 NonFleet Vehicles and Equipment Planned Actions and Projected Performance

LM will continue evaluating reductions in nonfleet vehicles and equipment fuel usage at its sites. The expected impact of these planned activities will be to reduce fuel usage and associated Scope 1 GHG emissions. No additional funding is required beyond what is currently budgeted. The Scope 1 and 2 GHG emissions goal is based on a year over year improvement (i.e., generate less emissions). In FY 2020, Scope 1 and 2 GHG emissions were atypically/artificially reduced by LM's COVID-19 pandemic response. Assuming the Scope 1 and 2 GHG emissions are not influenced to any large extent in FY 2021 by a prolonged COVID-19 pandemic response, the normal LM operations emissions in FY 2021 will be greater than they were in FY 2020. Thus, LM is at risk of missing this year over year reduction goal.

Measurable goals and milestones associated with non-fleet vehicles and equipment for FY 2021 include the following:

- Monitor the nonfleet vehicle and equipment fuel usage
- Encourage use of energy-efficient generators and equipment
- Continue separate tracking of fuel used for nonfleet vehicles and equipment

3.0 Water Management

Water use management for the U.S. Department of Energy (DOE) Office of Legacy Management (LM) focuses on potable and non-potable water consumption at LM sites and offices with an ongoing commitment to improvement in water efficiency.

3.1 Water Management Performance Status

LM reduced its potable water intensity (WI) by 97.3% compared to the baseline year of fiscal year (FY) 2007. LM reduced its potable WI by 76.7% in FY 2020 compared to FY 2019. In addition, LM also reduced its industrial, landscaping, and agricultural (ILA) water use by 99.5% compared to the baseline year of FY 2010. See Table 2 for LM's year over year water use performance. Due to restrictions put in place in response to the COVID-19 pandemic, the amount of water used at LM sites decreased. During the reporting period, field work was limited to mission-critical activities only and maximum telework policies went into effect in mid-March.

Table 2 summarizes potable; non-potable; and industrial, landscaping, and agricultural (ILA) water usage at all the LM sites combined since 2007 based on water and energy-use gross square feet values.

Table 2. LM Combined-Sites Water Use Since 2007

Fiscal Year	Gross Square Footage (GSF)[a]	Water Use (gallons)		Potable-Water WI (gallons/GSF)	Potable-Water WI Percent Change	ILA (non-potable) Use Percent Change (gallons)
		Potable Water	Non-potable Fresh Water ILA			
2007	10,992	1,497,098	N/A	136.20	N/A — Baseline year	N/A
2008	11,712	1,070,768	N/A	91.42	32.9% reduction	N/A
2009	22,512	549,462	N/A[c]	24.41	82.1% reduction	N/A
2010	22,464	80,358	503,336[d]	3.58	97.3% reduction	N/A—Baseline year
2011	69,157	1,112,688	456,093	16.09	88.2% reduction	9.4% reduction
2012	69,157	392,791	459,729	5.68	95.8% reduction	8.7% reduction
2013	38,422[b]	904,953	397,082	23.55	82.7% reduction	21.1% reduction
2014	38,422	381,952	458,530	9.94	92.7% reduction	8.9% reduction
2015	38,422	416,838	20,869	10.85	92.0% reduction	95.9% reduction
2016	40,616[e]	313,227	5500	7.71	94.3% reduction	98.9% reduction
2017	40,616	373,293	2000	9.19	93.3% reduction	99.6% reduction
2018	40,616	670,317	0	16.5	87.8% reduction	100.0% reduction
2019	39,944[f]	617,715	5500	15.5	88.6% reduction	94.3% reduction
2020	57,068	206,286	2400	3.61	97.3% reduction	99.5% reduction
2020 combined-sites potable-water WI = (206,286 57,068) = 3.61						
2020 combined-sites percent potable-water WI Reduction: **= [(2007 WI – 2020 WI) ÷ 2007 WI] × 100%** **= [(136.20 – 3.61) ÷ 136.20] × 100%** **= 97.3% reduction**						
2020 combined-sites percent ILA reduction: **= [(2010 ILA – 2020 ILA) ÷ 2010 ILA] × 100%** **= [(503,336 – 2400) ÷ 503,336] × 100%** **= 99.5% reduction**						

Notes:

[a] This table describes LM's WI (based on water and energy use square footages).

[b] LM demolished its Weldon Spring, Missouri, Site Administration Building in September 2012. Therefore, the EMS 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] The DOE Sustainability Performance Office (now named the Sustainability Performance Division) redefined fresh water in mid-2009 to include non-potable fresh water, so LM included non-potable use in the overall water use category. In 2010, the Sustainability Performance Office directed LM to not include non-potable water in its Executive Order 13514 potable water reduction goal, but the Sustainability Performance Office also said that LM should not eliminate the 2009 non-potable use values from past reported potable use data.

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

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

[f] LM decommissioned the trailer at the Old Rifle, Colorado, Processing Site in the fourth quarter of FY 2018, which decreased the square footage by 620 square feet.

Abbreviations:

EMS = Environmental Management System
GSF = gross square feet
ILA = industrial, landscaping, and agricultural
N/A = not applicable

As a best management practice, LM considers ways it can reduce, reuse, and recycle potable and ILA water with project-planning tools such as Project or Activity Evaluations (PAEs) and statements of work (SOWs).

The Environmental Management System (EMS) Water Conservation Team reviewed SOWs and PAEs and looked for opportunities to conserve water during projects. If COVID-19 pandemic restrictions continue through FY 2021, Energy Independence and Security Act (EISA) evaluations might be impacted due to travel restrictions. Desk evaluations will be performed as necessary.

LM maintains and follows a water management plan found in the LM/Legacy Management Support (LMS) *EMS Sustainability Teams Manual* (LM-Manual-3-20.3-1.0, LMS/POL/S11374), Section 4.0, "Water Conservation Plan."

LM has not calculated water balances because it has not been cost-effective to do so (i.e., LM has only minimal water use and mission-related water use).

Water meters are installed at all Goal Metric sites that have proven to be cost-effective to ensure accurate water use reporting and leak detection. Meter readings are documented on a monthly basis by site personnel and tracked in a spreadsheet accessible to all responsible team members.

LM has excluded facility square footage from the WI if the asset uses energy but no water for several years. The Sustainability Performance Division has been involved in discussions on the impacts the excess square footage has had on LM's WI causing increased, and incorrect, WI to be reported in past years. Table 3 shows a comparison of WI calculations using water use square footage compared to using DOE Sustainability Dashboard (i.e., energy-based) square footage.

Table 3. Water Intensity Comparison Using LM Water Use and Dashboard Gross Square Footage

Fiscal Year	GSF (LM water use only)	GSF (Dashboard)	Potable Water Use (gallons)	Potable-Water WI (gallons/GSF)		Potable-Water WI Percent Change	
				Using LM Water GSF	Using Dashboard GSF	Using Water GSF	Using Dashboard GSF
2007	10,992	69,790	1,497,098	136.20	21.45	N/A—Baseline year	N/A—Baseline year
2020	57,068	60,682	206,286	3.61	3.4	97.3% reduction	84.2% reduction

Abbreviations:
GSF = gross square feet
N/A = not applicable

Major water-consuming end-uses include use of sinks, toilets, drinking fountains, decontamination and dust suppression equipment, and a pond used to support the Fernald Preserve, Ohio, Site ground source heat exchange system.

LM utilized the following activities to minimize the use of potable water:

- Used non-potable industrial water at the Mound, Ohio, Site for flushing toilets.
- Low-flow toilets are installed at the Fernald Preserve Visitors Center and remote sensor hand-washing sinks are used in the Delta Building at the Fernald Preserve site.

3.2 Water Management Planned Actions and Projected Performance

LM will continue to track and monitor potable and ILA non-potable water use for FY 2021 and beyond to identify opportunities to reuse, recycle, and reduce potable and ILA water consumption.

LM expects minimal impact from planned FY 2021 activities; therefore, no additional funding is required beyond what is currently budgeted. However, future construction of DOE-owned buildings (e.g., the Weldon Spring Site Interpretive Center and a new building at the LM office at Grand Junction, Colorado) might increase overall water use once the buildings are occupiable. The amount of water used during the upcoming fiscal year is expected to be lower than usual due to the ongoing COVID-19 pandemic. An increase in teleworking and the resultant decrease in LM office-use directly impacts the amount of water used at LM sites. In addition, EISA evaluations might be impacted due to travel restrictions. Desk evaluations will be performed as necessary.

Measurable goals and milestones associated with water management for FY 2021 include the following:

- Continue to utilize and evaluate measures to reduce potable WI in FY 2021 but recognize that continued COVID-19 pandemic-related work and site inspection restrictions might impact achieving this goal. So far as possible, LM will strive to reduce potable WI by 0.5% as compared to FY 2020.
- Strive to reduce ILA water use as compared to FY 2020. LM will continue to utilize and evaluate measures to reduce ILA water use in FY 2021, but LM recognizes that continued COVID-19 pandemic-related work restrictions could impact achieving this goal.
- Maintain, update as needed, and follow the water management plan described in the LM/LMS EMS Sustainability Teams Manual, Section 2.3, "EMS Water Conservation Team".
- Ensure early involvement in the project planning process utilizing tools such as PAEs and SOWs to identify opportunities to reduce potable water consumption and usage, and identify or establish storm water management requirements, as applicable.
- Continue to evaluate newly acquired LM sites for Water Conservation Goal Metrics site applicability.

4.0 Waste Management

Waste management for the U.S. Department of Energy (DOE) Office of Legacy Management (LM) focuses on topics such as municipal solid waste, waste diversion, wastewater treatment, and source reduction.

4.1 Municipal Solid Waste and Waste Diversion

4.1.1 Municipal Solid Waste and Waste Diversion Performance Status

LM continued to remain committed to minimizing the generation of nonhazardous solid waste and diverting waste from landfills through sound environmental practices during fiscal year

(FY) 2020. LM used only offsite solid waste management facilities and did not use waste-to-energy systems or send any waste for treatment. No major initiatives or changes to missions occurred in FY 2020 that contributed in significant ways to LM's waste management performance:

- In FY 2020, LM did not achieve the annual performance goal of diverting a minimum of 50% nonhazardous solid waste, excluding construction and demolition material and debris (C&D), from landfills. LM diverted 28.8% of this waste through recycling.
- In FY 2020, LM achieved the year over year goal of reducing the amount of C&D sent to disposal facilities each year. As compared to FY 2019, LM sent almost 10 times less of this waste to landfills in FY 2020.
- In FY 2020, LM diverted 96.8% of its nonhazardous solid C&D from disposal in landfills. The waste diversion was accomplished through reuse and recycling. LM continued to track this information in FY 2020 as requested by the DOE Headquarters Sustainability Performance Division (SPD), even though there is no longer an associated percent diversion performance goal.

LM's response to the COVID-19 pandemic included the implementation of staff working remotely; a heightened and ongoing work space disinfecting effort; an increase in items that could not be recycled, such as disinfecting wipes; and a decrease in the number of visitors to LM visitor centers. These actions had an impact on waste generation during the reporting period.

LM remained committed to diverting its nonhazardous solid waste, excluding C&D, sent to landfills by 50%. LM missed this goal in FY 2020 and it is suspected that an overestimating occurred of the quantity of nonhazardous solid waste being sent to landfills from some of the LM office sites, which negatively skewed the associated waste diversion number. It is possible that, in both COVID-19–influenced and non-COVID-19–influenced out-years, LM could miss this goal again. LM will reassess how metrics are being gathered on this category of waste to see if technical changes need to be made.

Historically, LM's performance for C&D has been highly variable because the amount and type of waste generated, and the associated ability to divert the specific waste from landfills, varies by project. These atypical, nonroutine projects can make it difficult to predict future waste generation quantities. The very high percent diversion number (96.8%) in FY 2020 is largely attributable to efforts on the new Weldon Spring, Missouri, Site administration office building construction project. Outstanding planning, oversight, and implementation allowed for this project to divert most of its aggregate, wood, metal, gypsum, cardboard material, and other debris from landfills.

LM continued to increase the use of acceptable nontoxic or less-toxic alternative chemicals and to minimize the acquisition of hazardous chemicals and materials by continuing to incorporate sustainable purchasing requirements and resources into the purchasing and procurement system in FY 2020. LM also continued to apply the concepts of integrated pest management when a pest issue, typically involving the control of one or more state-listed noxious weeds, occurred on one of its sites by using a combination of environmentally preferred management options such as biological, cultural, mechanical, and chemical methods (e.g., using less toxic and species targeted herbicides) to control weed infestations.

A waste initiative implemented in FY 2020 was that LM revisited its organic waste material composting practices. For LM, composting opportunities are limited because LM has an absence of cafeteria services and limited landscaping responsibilities. As requested and facilitated by SPD staff, the LM Environmental Management System Waste Minimization and Pollution Prevention Team (EMS WMP2 Team) reviewed information provided by the Argonne National Laboratory (ANL) in Illinois pertaining to their large and successful composting program. A conference call was held with ANL staff, SPD staff, and EMS WMP2 Team members to discuss ANL's program.

The EMS WMP2 Team also prepared the *Plan for Assessing and Managing Compostable Material at U.S. Department of Energy Office of Legacy Management Office Sites* (LMS/S31433; September 2020), which provides a multi-year action plan for the EMS WMP2 Team to comprehensively and systematically evaluate current composting practices and opportunities at the LM office sites and to implement new composting programs, if appropriate, using a phased approach in the future. Overall compostable material at staffed sites continued to represent only a very small percentage of LM's overall waste stream.

As a best management practice, LM's pollution prevention, waste reduction, minimization, and recycling efforts continued to include:

- Having federal and contractor policies for pollution prevention.
- Promoting waste reduction and diversion strategies with project and program teams during the early stages of project planning.
- Presenting employees related messages through various forms at least once a year.
- Collecting and tracking waste data.
- Having recycling receptacles in individual offices or common areas at staffed office sites.

4.1.2 Municipal Solid Waste and Waste Diversion Planned Actions and Projected Performance

LM's FY 2021 waste management practices will remain mostly unchanged from FY 2020.

In the near term, uncertainties will remain in FY 2021 regarding the degree of responses needed to continue to protect workers and the public during the COVID-19 pandemic. Staff might continue to need to work from home and decreases in the number of site visitors to LM's different site visitor centers might continue, which will both act to atypically reduce LM's solid waste generation volumes. However, this overall reduction could be offset slightly by an increase in additional COVID-19 pandemic-response-generated waste, such as disposable disinfectant wipes.

In the long term, LM's continued increase in scope and number of sites will increase staffing, which will increase solid waste volumes to some extent. An increase in the number of visitors to different LM sites' visitor centers is also expected, which will also contribute to a small increase in solid waste volumes. Planned building construction is anticipated in out years to help accommodate the growing staff. These construction projects could increase the amount of C&D. Changes to waste generation at new unstaffed sites should not be significant. Reuse and recycling opportunities are expected to remain mostly unchanged at staffed sites.

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

- Continue to maintain federal and contractor policies for pollution prevention.
- Continue to consider ways to reduce, reuse, and recycle materials beginning in early project planning, and continue to use project-planning tools (e.g., Project or Activity Evaluation forms, statements of work) to facilitate waste minimization, sustainable purchasing (including use of recycled-content material), and waste diversion from landfills.
- Reassess how metrics are being gathered on nonhazardous solid waste, excluding C&D, that is being sent to landfills to see if technical changes need to be made.
- Continue to use the *Guidance for Implementing Construction Debris and Solid Waste Diversion Strategies* (LMS/PLN/S12185), which provides project managers and LM site managers with specific source-reduction, recycling, and waste-reduction measures to consider in planning and implementing projects and in operating their sites.
- Continue to assess planned new purchases, waste streams, and chemical inventories for pollution prevention and waste minimization opportunities.
- Continue to increase the use of acceptable nontoxic or less-toxic alternative chemicals and to minimize acquisition of hazardous chemicals and materials through sustainable purchasing.
- Continue to purchase only the appropriate quantities of products needed to perform the work.
- Evaluate nonhazardous waste recycling stations to determine whether changes are needed to increase participation and offset increases in population at staffed office sites.
- Share complex-wide pollution prevention messages.
- Utilize integrated pest management and landscape management practices, such as biological, cultural, mechanical, and chemical methods to control weed infestations, to reduce herbicide pollutants to the environment.
- Initiate FY 2021 planned actions for assessing composting generated waste as identified in the *Plan for Assessing and Managing Compostable Material at U.S. Department of Energy Office of Legacy Management Office Sites*.

The expected impacts of these planned activities on future fiscal years is continued source reduction, pollution prevention, waste minimization, and waste diversion from landfills. No additional funding is required beyond what is currently budgeted. The risk associated with obtaining this annual goal is medium, based on historic performance. In addition, the small volume of waste sent to landfills in FY 2020 will make it a challenge to improve upon performance in FY 2021.

Measurable goals and milestones associated with waste management for FY 2021 and beyond include the following:

- Continue to (1) maintain spreadsheet inventories of recycled and reused materials, chemicals, universal wastes, and solid, hazardous, and radioactive wastes, and (2) update the inventories at least two times per year.
- Continue to reduce the amount of (1) nonhazardous solid waste excluding C&D and (2) C&D generated annually.

- Divert at least 50% of nonhazardous solid waste, excluding C&D, from disposal in landfills through recycling and composting.
- Reduce the amount of nonhazardous C&D sent for disposal in landfills from the previous year's amount, through reuse, recycling, and composting.
- Complete tasks planned for FY 2021 in the *Plan for Assessing and Managing Compostable Material at U.S. Department of Energy Office of Legacy Management Office Sites*. This includes preparing and completing a questionnaire at each LM office site that can be used to (1) comprehensively assess and understand the current generation conditions of potentially compostable material, (2) identify current composting practices, and (3) identify and understand the currently known site-specific conditions that could influence future composting programs.

4.2 Wastewater Treatment

4.2.1 Wastewater Treatment Performance Status

No major initiatives or changes to missions or facilities occurred in FY 2020 that contributed in significant ways to LM's wastewater management performance. LM continued to use both onsite and offsite wastewater treatment facilities in FY 2020, which, along with many other categories, contributes to Scope 1 and 2 and Scope 3 greenhouse gas (GHG) emissions.

LM's FY 2020 response to the COVID-19 pandemic included an increase in staff working remotely and a decrease in the number of visitors to LM visitor centers to protect workers and the public from the virus. This resulted in an overall, atypical reduction in the amount of wastewater that required treatment. Thus, LM generated less GHG from wastewater treatment facility sources in FY 2020.

4.2.2 Wastewater Treatment Planned Actions and Projected Performance

In the near term, uncertainties will remain in FY 2021 regarding necessary responses to the COVID-19 pandemic. This might require continued increases in work from home and decreases in site visitors, which both will act to atypically reduce LM's wastewater volumes.

In the long-term post-COVID-19 pandemic response, it is expected that the continued increase in LM's scope and number of sites will increase staffing, which will increase the wastewater volume needing treatment. An increase in the number of visitors at the various LM sites' visitor centers is also expected to contribute to an increase in wastewater treatment volumes. However, these increases should not be significant. Increased volumes, in turn, will result in some increases in GHG emissions from wastewater treatment facilities.
LM will continue to use both onsite and offsite wastewater treatment facilities in FY 2021 and beyond. In addition, LM will continue to minimize wastewater to the extent possible and will perform the following planned activities:

- Continue to increase the use of acceptable nontoxic or less-toxic alternative chemicals, such as cleaning products, and minimize acquisition of hazardous chemicals and materials through sustainable purchasing.

- Continue to implement water conservation practices where appropriate, such as encouraging employees to not excessively run tap water while washing dishes, to help reduce the volume of wastewater generated.

The expected impact of these planned activities on future fiscal years is continued source reduction, pollution prevention, and wastewater minimization. No additional funding is required beyond what is currently budgeted. In FY 2020, Scope 3 GHG emissions were atypically/artificially reduced by LM's COVID-19 pandemic response. Assuming the Scope 3 GHG emissions are not influenced to any large extent in FY 2021 by a prolonged COVID-19 pandemic response, the normal LM operations emissions in FY 2021 will be greater than they were in FY 2020. Thus, LM is at risk of missing this year over year reduction goal.

Measurable goals and milestones associated with waste management for FY 2021 include the following:

- Continue to implement sustainable acquisition practices to procure more nontoxic or less-toxic alternative chemicals that can be introduced into the wastewater through projects or building activities or services
- Continue to implement potable water conservation practices to reduce the quantity of generated wastewater

5.0 Fleet Management

Fleet management for the U.S. Department of Energy (DOE) Office of Legacy Management (LM) focuses on topics such as petroleum use, alternative fuel use, vehicle mileage, and vehicle inventory.

COVID-19 pandemic impacts included a reduction in use of LM's fleet and vehicles due to mission-critical field activities being performed on a limited basis. This decreased LM's total mileage for the year. There were also various protective measures put in place to minimize contact between and among staff. For example, when recommencing field operations in May 2020, only one person per vehicle or piece of equipment was allowed, so workers could maintain social distancing and minimize person-to-person contact. These measures had various impacts to LM's fleet, fuel use, and vehicle mileage. Due to ongoing COVID-19 pandemic restrictions regarding vehicle occupancy, we anticipate an increase in rental vehicles if the pandemic extends into the busy field season starting next spring.

5.1 Fleet Vehicle Inventory

5.1.1 Fleet Vehicle Inventory Performance Status

There were no major changes in fiscal year (FY) 2020 to LM's U.S. General Services Administration inventory of leased vehicles, as the mission scope and needs had not changed.

Due to COVID-19 pandemic restrictions on vehicle occupancy, LM had 12 Flex Fleet Rental vehicles in FY 2020. Two Flex Fleet Rental vehicles became leased vehicles in accordance with Title 41 *Code of Federal Regulations* Section 102-34.35 (41 CFR 102-34.35) and consequently

became Federal Automotive Statistical Tool (FAST) reportable. Most new vehicle deliveries were delayed until FY 2021 due to limited manufacturer supply in response to the COVID-19 pandemic. All of the acquired light duty vehicles are capable of using E-85, which means that LM exceeded this goal.

5.1.2 Fleet Vehicle Inventory Planned Actions and Projected Performance

LM strives to meet or exceed the fleet vehicle inventory goal to the extent allowed by the LM mission through ongoing monitoring and reporting with the following planned activities:

- Maintain an inventory of vehicles, monitor the monthly fuel consumption and vehicle trip data, and take appropriate action to meet sustainability goals whenever possible.
- Continue to gather data from telematics and analyze that data on GSA and Archibus/Enterprise Asset Management (EAM) platforms to reduce the cost of current vehicle usage, identify more feasible means for improving vehicle usage, and right-size the fleet (if necessary) by reducing the number of unnecessary or oversized fleet vehicles.

5.2 Fleet Vehicle Mileage

5.2.1 Fleet Vehicle Mileage Performance Status

Fleet vehicle mileage decreased by 2% for FY 2020 due to mileage drops from LM's response to federal, state, and local COVID-19 pandemic restrictions. LM field work was limited to only mission-critical work for much of FY 2020. Local travel restrictions in some areas of the southwest further restricted LM's ability to complete typical seasonal field work, which further decreased vehicle mileage. Due to the remote nature of LM field work and the required long trips, LM normally exceeds the DOE mileage standard by an average of 39%.

5.2.2 Fleet Vehicle Mileage Planned Actions and Projected Performance

LM strives to meet or exceed the fleet vehicle mileage goal to the extent allowed by the LM mission through ongoing monitoring and reporting with the following planned activities:

- Identify the most fuel-efficient vehicle for a given task by considering miles driven, fuel used, vehicle's intended use, and road types traveled.
- Utilize carpooling, video conferencing, and telework as the mission allows.
- Work with project teams utilizing telematics data to determine best travel routes and eliminate non-essential stops to reduce mileage.

5.3 Fuel Usage

5.3.1 Fuel Usage Performance Status

While numbers were not available in FAST at the time of this reporting, the EAM system shows a decrease in overall fuel usage of 16% from FY 2019 to FY 2020, which exceeded the goal standard of a 2% decrease year over year.

LM's alternative fuel usage decreased by 42%, from 2569 gallons in FY 2019 to 1486 gallons in FY 2020. This did not meet the standard.

As a best management practice, alternative fuel vehicles (AFVs) are not purchased or leased by LM if there is no infrastructure within a 5-mile radius or 15 minutes of travel time from the garaging location. LM policy requires low greenhouse gas–emitting vehicles when they are available and do not negatively impact the mission. If they are unavailable and 85% ethanol fuel blend (E85) is available, LM will acquire E85 AFVs. LM will continue to try to acquire alternative fuel capable light-duty vehicles when appropriate for the mission and when the alternative fuels are readily available.

5.3.2 Fuel Usage Planned Actions and Projected Performance

Planned activities and their associated expected impact are further described in the LM/Legacy Management Support *Fleet Management Plan* (LM-Plan-3-13-2.0, LMS/POL/S11157). The expected impact of the planned activities is to meet or exceed the DOE goal without negatively impacting LM's mission or project task accomplishment. No additional funding is required beyond what is currently budgeted. The risk associated with obtaining fleet goals is high due to expanding number of sites, the lack of alternative fuel infrastructure, the remote nature of LM field work, and the required long trips.

LM strives to meet or exceed the fuel usage goal to the extent allowed by the LM mission through ongoing monitoring and reporting with the following planned activities:

- Reduce petroleum usage and increase alternative fuel usage by encouraging carpooling to conferences or onsite trips.
- Educate drivers about the proper use of E85 fuel and how to locate fueling stations, utilizing the fuel locator apps Mobile Alternative Fuel Station Locator and the GSAFleet2Go.
- Encourage staff to perform required daily motor vehicle inspections of the vehicles to identify unsafe conditions or defects that might negatively impact the vehicle's fuel use.
- Utilize telematics data to track alternative fuel usage and to promote the anti-idling policy that decreases fuel overall fuel usage.
- Monitor DOE's Energy Efficiency and Renewable Energy website to identify any changes to E85 fuel infrastructure and availability near LM vehicle garaging locations.

Measurable goals and milestones associated with fleet management for FY 2021 and beyond include the following:

- Record and track vehicle-related data and produce monthly and quarterly summary reports that include information regarding AFV acquisitions, mileage, utilization, fuel use, and cost
- Report fuel usage in quarterly *Performance Assurance Measures* reports to increase personnel awareness of fuel usage goals and progress
- Report data into FAST, which forecasts a projected 3-year vehicle acquisition that includes AFV acquisitions for all light-duty vehicles

6.0 Renewable Energy

Renewable energy covers the U.S. Department of Energy Office of Legacy Management's (LM's) approach and vision for addressing renewable energy resources. Renewable energy management focuses on onsite renewable generation systems and purchased clean and renewable energy.

6.1 Renewable Energy Performance Status

LM's performance was 100% for the renewable energy goal. LM has no thermal clean energy installations to report. Electricity constitutes most of the energy use by LM-owned buildings. There were no major initiatives or changes. LM adjusted the number of renewable energy credits (RECs) to be in line with actual electricity usage. Solar panels previously installed on Building 810 at the LM office at Grand Junction, Colorado, and at the Delta Office near the Fernald Preserve, Ohio, Site are included in this year's inventory.

There were no impacts to renewable energy performance related to LM's response to the COVID-19 pandemic and implementing minimum safe operations.

6.2 Renewable Energy Planned Actions and Projected Performance

LM will continue investigating ways to increase renewable energy, with the expected impact to be a continued, albeit sporadic, increase in renewable energy use at its facilities. LM has no thermal clean energy installations and has no plans to install any. Electricity will continue to make up most of the energy used by LM-owned buildings. The COVID-19 pandemic is not expected to impact renewable energy planned activities. No additional funding is required to implement renewable energy actions beyond what is currently budgeted. The risk associated with obtaining the thermal energy goal is high since the majority of LM's energy use is from electricity.

Measurable goals and milestones associated with renewable energy for fiscal year (FY) 2021 include the following:

- Continue to research installation of additional renewable energy sources at LM sites where it is cost-effective
- Review the number of RECs purchased from the Defense Logistics Agency and make needed adjustments to meet any clean energy or renewable energy goals
- Continue to purchase national RECs to meet renewable energy goals and offset greenhouse gas emissions from electricity use as needed
- Monitor renewable energy goal performance as buildings using electricity enter the LM portfolio and take steps to ensure that the goals continue to be met
- Consider installation of renewable energy systems in new buildings, including solar hot water heaters, based on renewable energy feasibility studies and whether installation is cost-effective

7.0 Sustainable Buildings

This section focuses on the U.S. Department of Energy (DOE) Office of Legacy Management (LM) approach and vision for addressing green building initiatives, such as the High Performance Sustainable Buildings (HPSB) Guiding Principles (GPs), as well as building inventory changes.

7.1 Guiding Principles

7.1.1 Guiding Principles Performance Status

LM has successfully met the sustainable buildings goal; 50% of LM's buildings currently comply with the 2016 GPs using either building count or gross square footage (GSF). Of the two LM-owned buildings > 5000 GSF, one qualifies as a sustainable building. The Fernald Preserve, Ohio, Site Visitors Center received Leadership in Energy and Environmental Design (LEED) Platinum certification in 2008. The new Weldon Spring, Missouri, Site Interpretive Center, currently under construction, is on track to meet the GPs. Completion and occupancy are planned for early to mid-fiscal year (FY) 2021.

Several of LM's existing owned and leased buildings met commissioning, benchmarking, and indoor environmental quality requirements as part of the HPSB GPs between FY 2008 and FY 2014. Actions related to these requirements are ongoing, and their importance was evident when the COVID-19 pandemic struck in the middle of FY 2020. Personnel at these facilities acted to adapt mechanical systems to improve air quality, flush potable water lines, and adjust cubicle layouts and office circulation to ensure the staff's health and safety as they returned to the offices.

7.1.2 Guiding Principles Planned Actions and Projected Performance

LM will continue assessing and prioritizing buildings > 5000 GSF for their potential to meet the GPs identified in *Determining Compliance with the Guiding Principles for Sustainable Federal Buildings* (Council on Environmental Quality, February 2016). The expected impact of LM's planned building assessments is identification of actions that lead to successful compliance with GPs. Facilities will continue to adapt mechanical systems to improve air quality, flush potable water lines, and adjust cubicle layouts and office circulation to ensure the staff's health and safety from the COVID-19 pandemic as they return to the offices. No additional funding is required to conduct these assessments beyond what is currently budgeted

LM will begin considering sustainable improvements with the greatest cost efficiency gains at all buildings, instead of at just those buildings that have matched the prior GSF threshold. In accordance with the *Implementing Instructions for Executive Order 13834, Efficient Federal Operations* (Council on Environmental Quality, April 2019), the threshold for calculating sustainable building progress is based on owned buildings > 10,000 GSF with bonus credit towards GSF progress for qualifying buildings < 10,000 GSF.

The HPSB GPs and related assessment processes have been incorporated into the LM/Legacy Management Support (LMS) *EMS Sustainability Teams Manual* (LM-Manual-3-20.3-1.0,

LMS/POL/S11374), *Real Property Management* (LMS/POL/S04335), *Facility Management Plan* (LMS/POL/S05299), and *LM Office Space Siting Plan* (LMS/S18950).

Measurable goals and milestones associated with GPs for existing buildings for FY 2021 include the following:

- Assess all LM-owned buildings greater than 5000 GSF for the GPs. The remaining owned buildings have not been assessed against the GPs due to size, use, occupancy, or exclusions. Buildings not excluded are evaluated as Energy Independence and Security Act (EISA) Section 432–covered buildings, and energy-saving strategies will be implemented if cost-effective.
- Continue to track utility usage and gather electronic and lighting inventory for the LM office at Westminster, Colorado, in Energy Star Portfolio Manager and support an application for an Energy Star Tenant Space recognition (once the full, market-scale program is launched in late calendar year 2020).
- Once approval from the IT group is received, develop a working pilot for an internal energy dashboard to communicate and monitor progress against sustainability goals.

7.2 New Building Design

7.2.1 New Building Design Performance Status

Occupancy took place in the expanded LM office at Westminster shortly after construction was completed in October 2019.

7.2.2 New Building Design Planned Actions and Projected Performance

The LM office at Grand Junction, Colorado, is located at the Riverview Technology Corporation (RTC) complex, where LM is the sole tenant in six leased buildings on the RTC campus. These buildings provide office space for all site personnel. LM also owns an adjacent 8-acre parcel that includes a vacant building (Building 7).

The Building 7 Temporary Space Project includes renovations of the 18,900 GSF building, to address the immediate need for additional office space and allow for growth and flexibility in the future. The project is expected to be awarded to a design/build contractor in late 2020, with construction to be completed by April 2021. The plan includes:

- Correcting or updating older and improperly functioning building systems.
- Bringing life safety items up to current codes.
- Creating space for approximately 47 new cubicle/workstations and a new meeting room.
- Using existing high-bay areas for storage.

Future plans for the LM office at Grand Junction include vacating several of the leased buildings and consolidating the majority of the office space onsite into a new administration building and the existing Building 7 (mentioned above), both on the DOE-owned parcel at the north end of the campus. The new administration building will be a three-story, 36,000 GSF building and will be built to LEED Gold standards, as well as meeting the HPSB GPs. Further sustainable

improvements will be considered for Building 7 during this phase. The infrastructure improvements and the administration building will be completed as two separate projects under the U.S. Army Corps of Engineers. The 100% design for the infrastructure will be completed by early FY 2021, with 100% design on the administration building by mid- to late FY 2021. Construction of the infrastructure improvements should be completed by early to mid-FY 2022. Construction of the administration building should be completed by mid-FY 2023.

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

Measurable goals and milestones associated with new building design in FY 2021 include the following:

- Continue to track utility usage and gather electronic and lighting inventory for the LM office at Westminster in Energy Star Portfolio Manager. This space will go through the Energy Star Tenant Space Recognition application process in FY 2021.
- Continue to provide sustainability support to projects by including language and requirements to meet energy efficiency standards in project plans, using space optimization practices, and incorporating resilient design and management elements into the design of new LM buildings.
- Continue to apply sustainability practices to the maximum extent practicable in new leases for facilities greater than 10,000 rentable square feet leased directly by LM or the LMS contractor if reimbursed by LM.
- Continue to apply resiliency best practices into building design and management elements of new or newly retrofitted buildings.

8.0 Acquisition and Procurement

8.1 Acquisition and Procurement Performance Status

Acquisition and procurement focuses on (1) using sustainable acquisition strategies for service and construction contracts and (2) procuring environmentally sustainable products in accordance with Federal Acquisition Regulation requirements and other applicable federal procurement policies.

In fiscal year (FY) 2020, 100% of new contract actions, under new and existing contracts, included requirements that the products and services:

- Be energy-efficient (i.e., be Energy Star certified and/or comply with Federal Energy Management Program [FEMP] guidelines, as appropriate).
- Be water efficient (i.e., be certified as water-efficient under the U.S. Environmental Protection Agency [EPA] WaterSense Program, as appropriate).

- Be BioPreferred and biobased (as defined by the U.S. Department of Agriculture [USDA] BioPreferred Program), environmentally preferable (including Electronic Product Environmental Assessment Tool (EPEAT)–registered products), non-ozone-depleting, and nontoxic or less toxic.
- Contain recycled content, including paper containing 30% postconsumer fiber.

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) does not do any subcontracting. As a best management practice, the Legacy Management Support (LMS) contractor flows these requirements down to their subcontractors.

8.2 Acquisition and Procurement Planned Actions and Projected Performance

LM will continue to promote sustainable acquisition and procurement to the maximum extent practicable. The expected impact of the planned activities is to meet or exceed the DOE goals. No additional funding is required beyond what is currently budgeted.

LM will perform the following planned activities:

- Promote sustainable acquisitions and procurement to the maximum extent practical and ensure that 95% of new contract actions, under both new and existing contracts, contain language requiring the supply or use of environmentally preferable or sustainable products and services.
- Use the bimonthly team meetings of the acquisition group to emphasize the federal requirements to acquire designated products (Energy Star, FEMP, WaterSense, BioPreferred, EPEAT, etc.) in all procurement actions as applicable.
- Attend the DOE bimonthly sustainable acquisition teleconferences/webinars to stay abreast of what other DOE programs and DOE contractors are doing to purchase sustainable products and services.

Measurable goals and milestones associated with sustainable acquisition and procurement for FY 2021 include the following:

- Include the required language to ensure that products and services will be green or sustainable in the LMS contractor's procurement terms and conditions for all commodities and services
- Ensure that 95% of EPA and USDA–listed products and services purchased, excluding all purchases made with credit cards, are environmentally preferable or sustainable as subject to certain qualifications
- Track compliance with the goal of purchasing 95% sustainable products and services (including tracking for the quarterly performance assurance summary reports and LM's annual reporting on the FedCenter website and in the Dashboard)
- Require that purchases of noncompliant energy-efficient products have written preapproval from a subject matter expert

9.0 Measures, Funding, and Training

The Measures, Funding, and Training category focuses on U.S. Department of Energy (DOE) Office of Legacy Management (LM) implementation of identified efficiency and conservation measures (ECMs) through appropriations, performance contracts, and obligations as well as through LM's sustainability-related training and education for employees.

9.1 Efficiency and Conservation Measures

9.1.1 Efficiency and Conservation Measures Performance Status

A major ECM at the Weldon Spring, Missouri, Site was a restructuring of the Weldon Spring power distribution system, which resulted in reduced energy usage and costs. Oversized LM-owned transformers were replaced with appropriately sized utility-owned transformers. In addition, single phase service replaced 3-phase service where appropriate, such as in the Weldon Spring Leachate Facility. Metering was placed on the load side of the distribution transformers rather than on the line side. This resulted in LM no longer being billed for energy losses through transformers.

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

There were no impacts to ECM performance related to COVID-19 pandemic related shutdowns.

9.1.2 Efficiency and Conservation Measures Planned Actions and Projected Performance

LM will continue to pursue identification of ECMs. The expected impact of these activities on future fiscal years is continued reductions in energy, water use, and greenhouse gas (GHG) emissions. The COVID-19 pandemic is not expected to impact ECM planned activities. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with ECMs for fiscal year (FY) 2021 include the following:

- Prioritize and implement identified ECMs
- Reduce the number of deferred maintenance tasks identified for energy-consuming buildings and facilities annually, as funding allows
- Complete condition assessment surveys for all DOE-owned and DOE-leased buildings and trailers, and for Other Structure and Facilities (also known as OSFs), on a 5-year schedule, as required by DOE Order 430.1C Chg 2, *Real Property Asset Management*
- Continue to reinvest cost savings realized from ECMs, where applicable

9.2 Performance Contracts

9.2.1 Performance Contracts Performance Status

During FY 2020, LM projects did not meet the monetary requirements for a performance contract. Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) funding opportunity information was presented to LMS site leads, but no projects were identified.

9.2.2 Performance Contracts Planned Actions and Projected Performance

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

- Determine the cost-effectiveness of projects and consider the implementation of new technologies for demonstration purposes, the facilitation of technology and information transfer, and the accomplishment of deferred maintenance tasks. This includes studying and applying cost-effective, new technologies that enhance protectiveness.
- Continue to refine the scope and estimated implementation costs for projects, evaluate funding sources for financial and technical rigor, and seek appropriate funding sources over the next 5 years for those life-cycle cost-effective projects.
- Continue to inform and educate LMS site and facility leads on performance contracting and AFFECT funding opportunities.
- Despite the implementation of these actions, LM does not expect to contribute to DOE obtaining the performance contract goal, due to the nature of LM sites and activities. No additional funding is required to implement these actions beyond what is currently budgeted. The risk for obtaining this goal is high, as LM projects that would qualify for a performance contract are not high enough in cost to qualify to meet qualifications.

Measurable goals and milestones associated with performance contracts for FY 2021 and beyond include the following:

- Evaluate expanding the usage of new technologies (such as remote sensing, telemetry, and unmanned aircraft system–based sensors with instruments) to (1) improve site monitoring efforts while reducing costs, natural resource use, and business travel–related GHG emissions, and (2) achieve sustainability goals
- Pursue additional training on estimating costs, scheduling, and preparing return on investments and simple paybacks
- Continue to examine reinvestment potential to use realized cost savings from ECMs

9.3 Appropriations and Direct Obligations

9.3.1 Appropriations and Direct Obligations Performance Status

LM completed two projects at the Weldon Spring site in FY 2020 to further accomplish LM's energy conservation goals:

- Replaced the oversized 1300 kilovolt-amps (kVA) transformers with 200 kVA transformers to match load/demand with the supply. This will reduce transmission and distribution losses.
- Replaced the old overhead lines with underground lines to reduce maintenance and safety issues.

9.3.2 Appropriations and Direct Obligations Planned Actions and Projected Performance

LM plans to implement energy-efficient projects that could reduce energy-use intensity compared to the previous year. The expected impact of these activities is a continued reduction in energy usage. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with appropriations and direct obligations for FY 2021 include the following:

- Determine path forward for utilization of Building 7 at the LM office at Grand Junction, Colorado
- Complete construction of the new Weldon Spring Site Interpretive Center
- Subcontract a design/build contract with a subcontractor to build a new building at the LM office at Grand Junction

9.4 Training and Education

9.4.1 Training and Education Performance Status

Sustainability team members and Environmental Compliance staff worked with the EMS training team to update several EMS-related courses.

As best management practices, LM:

- Developed and published sustainability awareness articles in the internal quarterly newsletter *ECHO Outlook*. Related posters, contests, and activities sometimes accompanied the articles to encourage sustainability-related behavior change.
- Delivered presentations with more specific discussion of EMS-related topics and actions to increase awareness at all-hands meetings, monthly safety meetings, and meetings with management and project planning personnel.
- Tracked training completions and notified managers when an individual's training was overdue.

9.4.2 Training and Education Planned Actions and Projected Performance

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

- Maintain the certified energy manager's certification.
- Identify an additional person to take energy manager training.

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

10.0 Travel and Commute

Travel and commute focuses on all business-related travel as well as employee commuting and how those effect the U.S. Department of Energy (DOE) Office of Legacy Management (LM) commitment to decrease greenhouse gas (GHG) emissions. Business ground travel, as included in this category, was limited to personal vehicle use for business travel, vehicle rentals, leased vehicles, taxi use, and mass transit business travel. Commute travel addressed staff's travel from their personal residences to and from LM's offices for work.

10.1 Travel and Commute Performance Status

Because of the nationwide distribution of LM's staffed and unstaffed sites, travel was an integral part of LM's day-to-day activities and was required to achieve LM's mission. In fiscal year (FY) 2020, LM continued to add sites nationwide and increase work activities and staffing. This likely resulted in a slight increase in these types of travel prior to LM's response to the COVID-19 pandemic, which resulted in a significant curtailment of air, ground, and commuter travel to help ensure protection of staff and the public.

Neither LM's business ground travel nor federal air travel data was available at the time of this document's publication, so only Legacy Management Support (LMS) contractor data was addressed for these types of travel in this FY 2020 reporting effort. Because of the partial data, LM's FY 2020 Scope 3 GHG emissions cannot be included in this report nor can the LMS contractor's performance be determined toward achieving the annual Scope 3 GHG reduction goal of having a year over year emissions reduction from a FY 2008 baseline. However, given that significant decreases occurred to air, ground, and commuter travel in FY 2020 due to LM's response to the COVID-19 pandemic, it was reasonable to expect that LM achieved the year over year reduction goal in FY 2020 as compared to FY 2019.

As prompted by DOE's *Fiscal Year 2020 Site Sustainability Plan Guidance* (September 2019), the following provides additional information pertaining to LM's business (ground and air) and commuter travel in FY 2020 during normal, non-COVID-19 response conditions:

- LM used teleconferencing services and virtual-presence software to conduct meetings and training, as appropriate or available.
- Where feasible, LM personnel shared business rental cars or used mass transit while attending out-of-town meetings and events.

- LM used flexible work schedules and teleworking, which helped reduce LM commuter travel.
- Federal employees at the LM office at Westminster, Colorado, were eligible to receive reduced prices on public bus passes as part of a transit subsidy program.
- The LM Business Center at Morgantown, West Virginia, and the Fernald Preserve, Ohio, Site had preferred parking for electric vehicles and hybrids.
- LM's mission required long-distance driving as well as the use of four-wheel-drive vehicles to access remote areas. Because many LM sites are in remote locations without buildings, workers depended on vehicles as climate-controlled areas (to warm up or cool down) to meet worker heat and cold stress safety and health requirements.
- In October 2017, LM conducted a logic-driven commuter survey of all LM and LMS staff (excluding LM staff at the Forrestal office, who are included in the DOE Headquarters survey) to obtain commuter data. Staffing numbers have increased since the survey was conducted, and survey results were adjusted to reflect current staffing numbers. The survey results were also adjusted this year to account for the significant amount of telework that occurred from March through September 2020 due to the COVID-19 pandemic, significantly decreasing the average number of commuting days.

10.2 Travel and Commute Planned Actions and Projected Performance

Outside of the scope of LM's COVID-19 response, LM's FY 2021 travel and commute practices will remain mostly unchanged from FY 2020. LM continues to be committed to reducing GHG emissions associated with business traveling and commuting. Consideration of ways to limit and mitigate potential employee and public exposure to the COVID-19 pandemic will factor into all travel-related decisions during the pandemic. With that overarching caveat, LM will perform the following planned activities:

- Evaluate and implement methods to consolidate and reduce business ground and air travel.
- Implement fleet management vehicle and fuel use requirements to help reduce air emissions.
- Follow best management practices to reduce travel by combining different functional activities into one trip; consolidating work at adjacent or en-route remote sites into one trip; carpooling to the extent possible for business travel; and using videoconferences, teleconferences, Skype, and instant messaging in place of in-person meetings. LM's response to the COVID-19 pandemic will negatively impact LM's ability to carpool, to pair up in cars, and to consolidate work and combine site trips.
- Allow flexible workweeks to reduce commute time (e.g., four 10-hour days), and work to increase telecommuting options through mutual alternative work agreements designed to reduce commuting days.
- Allow for remote work and work-from-home as options, as appropriate. LM's response to the COVID-19 pandemic will greatly impact work-from-home options as employees have been encouraged to work-from-home for a significant portion of FY 2021. It is uncertain when employees will be encouraged to return to the office fulltime.
- Pursue installation of additional renewable energy System Operation and Analysis at Remote Sites (SOARS) systems where cost-effective, and maintain operation of the existing system, to help reduce travel.

- Share business rental cars or use mass transit while attending out-of-town meetings and events. LM's response to the COVID-19 pandemic will negatively impact LM's ability to pair up in cars and take public transit.
- Use the Cisco TelePresence Management Suite tracking and reporting tools to track videoconferencing.
- Use webinars to enhance job skills, and use other seminars and training sessions provided by federal and state agencies and educational institutions, in place of traveling to in-person trainings. Broader availability of webinar-style training by training groups during the COVID-19 pandemic should make this easier to achieve.
- Encourage employees to carpool and to use public transportation to the extent possible, while ensuring worker safety and well-being, during their commute to work. LM's response to the COVID-19 pandemic will negatively impact LM's ability to carpool, pair up in cars, and take public transit.

The ability to achieve the year over year Scope 3 GHG emission reduction in FY 2021 (compared to FY 2020) and beyond will be dependent on the ongoing response to the COVID-19 pandemic. It is predicted that FY 2020 Scope 3 GHG emissions will be much lower than typical for LM, so that achieving further decreases may be difficult. Additionally, it is unknown how long the impacts of COVID-19 pandemic on travel and commuting will last.

No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with traveling and commuting in FY 2021 and beyond include the following:

- Continue to track all travel sources and update datasheets at least once per year.
- Prepare and conduct a new LM/LMS commuter survey in FY 2021 to obtain updated staff commuter information. The survey questions will collect changes to individual commute practices due to LM's response to the COVID-19 pandemic. Commuting practices are likely to continue to vary over time as the LMS contractor responds to local and national guidance on the COVID-19 pandemic.
- Continue efforts to reduce overall travel-related GHG emissions.

11.0 Fugitives and Refrigerants

Fugitives and refrigerants focus on all fugitive emissions or refrigerants used at U.S. Department of Energy Office Legacy Management (LM) sites and any efforts to minimize associated greenhouse gas (GHG) emissions.

11.1 Fugitives and Refrigerants Performance Status

No major initiatives or changes to missions or facilities occurred in fiscal year (FY) 2020 that contributed in significant ways to LM's fugitive gases and refrigerant Scope 1 GHG emission performance. There is no specific quantifiable performance goal to report on for fugitive gases

and refrigerant emissions, which are only two of many contributors to LM's overall Scope 1 GHG total emission.

LM's response to the COVID-19 pandemic had no impact for refrigerant emissions and no appreciable impact for fugitive gases emissions in FY 2020. Any continued LM COVID-19 pandemic response in FY 2021 would be expected to have the same no-impact result for these two GHG emission sources.

Use of ozone-depleting substances and fluorinated gases from fugitive gases and refrigerants are a relatively small part of LM's overall operations and represent a small fraction of overall anthropogenic carbon-dioxide-equivalent emissions for the organization. The combined GHG emissions from these two sources were mostly unchanged in FY 2020 from FY 2019 and are less than 1.0 metric ton of carbon dioxide equivalent.

LM does not currently use or maintain sulfur hexafluoride (SF_6) in its inventory. This will remain true in the future.

11.2 Fugitives and Refrigerants Planned Actions and Projected Performance

LM's FY 2020 fugitives and refrigerant management practices will remain mostly unchanged in FY 2021. The use of additional fugitive gases associated with increased sampling may occur to a very small degree in the future as additional sites are transferred to LM.

Any continued LM COVID-19 pandemic response in FY 2021 is expected to have no impact for refrigerant emissions and no appreciable impact for fugitive gases emissions.

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

- Continue to track fugitive gas and refrigerant uses and inventories via internal tracking documents
- Continue to look for improvement opportunities and, when possible, acquire less toxic alternative chemicals or choose alternative equipment not containing fugitive gases or refrigerants
- Continue to inspect chemical containers, gas cylinders, and refrigerant equipment in accordance with manufacturer's guidelines and as necessary to reduce potential spills and leaks

The expected impact of these planned activities is the continued maintenance, or a slight reduction, of fugitive gases and refrigerants emissions in future fiscal years. No additional funding is required to conduct these actions beyond what is currently funded.

Measurable goals and milestones associated with management of fugitive gases and refrigerants for FY 2021 and beyond include the following:

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

- Evaluate the capability of the new chemical inventory software, "MSDSonline," to determine if it can track fugitive gas use over a reporting period and if it would provide appropriate data for sustainability reporting
- Continue to maintain a spreadsheet inventory of refrigerants and update the inventory at least twice per year

12.0 Electronics Stewardship

This section covers the U.S. Department of Energy (DOE) Office of Legacy Management's (LM's) approach and vision for addressing electronic stewardship. Electronic stewardship focuses on topics, such as electronics acquisition, electronics operations, end-of-life electronics, and data centers.

Despite the challenges caused by the COVID-19 pandemic and an abrupt shift to maximum telework, LM has continued to fulfill its environmental commitments in electronic stewardship at all facilities.

12.1 Electronics Operations

12.1.1 Electronics Operations Performance Status

LM met this interim target in FY 2020. Power management is enabled in 100% of eligible equipment. LM utilized the following best management practices to reduce power usage:

- LM used a network group policy to administer power management on all desktop and laptop systems. The policy was extended to digital displays and printers and cannot be altered by users.
- Systems running mission-critical processes requiring exemption from the standard power management configuration were documented as exceptions and controlled by a separate group policy.
- LM enabled automatic duplex printing on all desktops and laptop systems.

12.1.2 Electronics Operations Planned Actions and Projected Performance

LM will continue enabling power management capabilities on eligible equipment to ensure attainment of the goal. The expected impact will be to continue to achieve goals related to electronics operations. The COVID-19 pandemic is not expected to impact electronic stewardship planned activities. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated electronics operations for FY 2021 and beyond include the following:

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

- Pursue efficient use of desktop, laptop, or notebook systems, merging use where possible to reduce the number of devices in operation. Minimize the number of systems existing in general office space, including the number of duplicate desktop and laptop or notebook computer systems.
- Enable automatic duplexing capabilities by default on eligible equipment to ensure attainment of the goal.
- Phase out locally attached, personal-use printers, facilitated by the secure printing option now available on all network-managed multifunction devices at all locations. The growing use of shared network devices will contribute to the ongoing reduction of paper, printing supplies, and power usage.

12.2 Electronics End-of-Life

12.2.1 Electronics End-of-Life Performance Status

LM remained committed to using environmentally sound disposition options (reuse or recycling) to manage end-of-life electronics during FY 2020. No major initiatives or changes to missions or facilities occurred in FY 2020 that contributed in significant ways to LM's used electronics disposition.

In FY 2020, LM managed 100% of its end-of-life electronics through environmentally sound disposition options, thereby achieving the annual performance goal of 100%. The sound disposition options are discussed in the "Plans and Projected Performance" section below.

In FY 2020, electronics played a significant role in LM staff's ability to work remotely in response to the COVID-19 pandemic. LM continued to achieve its annual electronic end-of-life performance goal despite the new challenges presented by the COVID-19 pandemic.

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

LM remains committed to environmentally sound disposition options for used electronics in FY 2021, and LM's electronics end-of-life management practices will remain mostly unchanged from those used in FY 2020. LM anticipates that it will be able to achieve the annual performance goal for used electronics in out-years.

With regard to the COVID-19 pandemic's effect on used electronics end-of-life management in FY 2021, it is anticipated that as the number of staff returning to work at LM sites increases, there will be a corresponding increase in the amount of used electronics brought back to the sites that require environmentally sound management.

Procedures identified in the *Personal Property Management Manual* (LMS/POL/S04336) require that all personal property excess actions involve Personal Property personnel. All used electronics that can be reused within LM will be transferred. If the used electronics cannot be reused within LM, Information Technology (IT) personnel will coordinate with Personal Property personnel to provide pictures of used electronics for posting to the GSAXcess website (https://gsaxcess.gov/). This website will aid with the disposition of excess used electronics through interagency transfers and the U.S. General Services Administration (GSA)

Exchange/Sale authority. If selling used electronics is not an appropriate option, the electronics will be donated through appropriate avenues established to facilitate reuse, such as GSA's Computers for Learning Program (https://computersforlearning.gov/) and eligible state and nonprofit organizations. Recycling is viewed as the next disposition option if sale and other reuse are not viable options. All LM used electronics designated for recycling will be collected and recycled through federal operations or private certified recyclers. Disposal of used electronics as waste occurs only if reuse and recycling are not feasible. As in past years, LM will remain committed to not disposing any used electronics as waste and does not expect to dispose of any used electronics in FY 2021.

In addition, LM will perform the following planned activities:

- Continue to track and manage electronics end-of-life data. LM's IT and Personal Property teams will continue to develop and refine the process for tracking and dispositioning used electronic equipment.
- Monitor appropriate electronics reuse and recycling opportunities, and choose reuse over recycling, when possible.
- Ensure that used electronics accumulated for recycling are managed in accordance with applicable requirements and that best management practices are used.
- Ensure electronics recyclers are legitimate, are certified, and employ legal and environmentally sound disposition strategies prior to sending electronics for recycling.
- Ensure that the equipment in the end-of-life electronics inventory is dispositioned promptly to minimize the accumulation of excessive quantities of used electronics at LM sites.
- Reinforce with all staff that used electronics shall be reused and recycled, not disposed of as waste.
- Ensure that data contained on any disposed equipment is properly sanitized using LM established procedures.

The expected impact of these planned activities on future fiscal years is that LM will be able to continue to appropriately manage all used electronics through reuse and recycling. No impacts related to the COVID-19 pandemic are expected to impact electronic disposition planned activities. No additional funding is required beyond what is currently budgeted to support this effort.

Measurable goals and milestones associated with electronics end-of-life management for FY 2021 and beyond include the following:

- Track and manage data about all LM electronics eligible for reuse
- Track and manage data about all LM electronics recycled
- Dispose of 100% of used electronics in an environmentally sound manner through eligible reuse and recycling

12.3 Data Centers

12.3.1 Data Centers Performance Status

LM committed to install separate metering in both of its data centers (one at the LM Business Center [LMBC] at Morgantown, West Virginia, and the other at the LM office at Grand Junction, Colorado) to achieve the power utilization effectiveness (PUE) target of 1.4.

12.3.2 Data Centers Planned Actions and Projected Performance

LM will continue to effectively utilize power associated with new or existing data centers to ensure attainment of the PUE target. The expected impact of LM's effective power use is continued compliance with the PUE target. No impacts related to the COVID-19 pandemic are expected to impact data center planned activities. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with data centers for FY 2021 and beyond include the following:

- Optimize the configuration of LM's data centers by monitoring data center power consumption in accordance with federal Data Center Optimization Initiative (DCOI) standards and through LM's ongoing server virtualization effort
- Observe and follow all guidance and metrics as determined by DCOI standards
- Install software to measure server utilization effectiveness
- Install separate metering in both of its data centers located at the LMBC at Morgantown and at the LM office at Grand Junction to achieve the PUE target of 1.4

12.4 Electronics Acquisition

12.4.1 Electronics Acquisition Performance Status

LM was awarded the Electronic Product Environmental Assessment Tool (EPEAT) Green Purchaser award for the fifth consecutive year. The EPEAT program provides a method for evaluating the impact electronic equipment has on the environment. Devices are ranked as gold, silver, and bronze, with gold for devices that cause the least amount of damage to the environment. Nearly 100% of LM's electronic equipment is ranked EPEAT Gold.

12.4.2 Electronics Acquisition Planned Actions and Projected Performance

LM plans to continue procuring EPEAT-registered products at current compliance levels in accordance with DOE requirements. The expected impact will be to continue to achieve goals related to electronics acquisition. No impacts related to the COVID-19 pandemic are expected to impact electronics acquisition planned activities. No additional funding is required beyond what is currently budgeted.

Measurable goals and milestones associated with electronics acquisition for fiscal year (FY) 2021 and beyond include the following:

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

13.0 Resilience

Resilience focuses on the U.S. Department of Energy (DOE) Office of Legacy Management (LM) policies and plans implemented to better adapt to changing conditions, to respond to emergencies, and to withstand or recover from disruption. Resilience efforts help manage risks to LM assets, infrastructure, operations, and personnel.

13.1 Resilience Performance Status

In conjunction with the Emergency Management (EM) supporting teams, LM's Program Management Office (PMO), Legacy Management Support (LMS) Asset Management Support, and LMS Facility Management, the EMS Resilience team completed the following in fiscal year (FY) 2020:

- LM continued to pursue the resilience objectives identified in LM *2016–2025 Strategic Plan* (DOE/LM-1477); LM policies, plans, and procedures; the LM *FY 2017–FY 2021 High Performing Organization Plan* (June 2017); and DOE orders, Executive Orders, and other directives.
- Upgraded the backup and recovery application that supports all the LM data processing environments. These changes enhanced capability to restore connectivity quickly and be more responsive to staff needs.
- In response to a U.S. Government Accountability Office (GAO) report on LM's Environmental Liabilities, LM initiated an effort with the DOE National Laboratories network to develop an assessment of site and programmatic risks as a result of climate change.
- Two people attended a Technical Resilience Navigator (TRN) webinar sponsored by the Federal Energy Management Program (FEMP).
- Coordinated with offsite agencies as applicable to encourage the development of memoranda of understanding (MOUs), memoranda of agreement (MOAs), mutual aid agreements (MAAs), and letters of agreement (LOAs) directly related to emergency management, emergency response, and law enforcement. Currently, no agreements exist. In addition, LM and LMS EM staff pursued relationships with external emergency response organizations and resources, as needed, that were associated with LM sites and activities in FY 2020.
- The *Site Security Plan* (LMS/POL/S11558) was reviewed in FY 2020 with no major updates required.

- An annual review of the site security assessments for all occupied locations in the LM complex was conducted. While no specific new hazards were identified during the assessments, a continued approach to be proactive in security at sites is underway.
- An unusual spike in thefts and subsequent vandalism at unoccupied, remote locations was noted during the late summer and early fall of 2020. Extra precautions and increased monitoring have been implemented to assist in deterring thefts and vandalism.
- Radios have been procured to improve communication capabilities at occupied sites when there is a power loss.

The COVID-19 pandemic affected LM and LMS contractor site operations on many different levels. Several of the EMS Resilience team operations were temporarily impacted when LM went into a limited operation status in the middle of March 2020 because of the COVID-19 pandemic. Mission-critical field activities were performed on a limited basis, LM and LMS office staffing was reduced significantly, and most staff went on maximum telework.

- LM and LMS EM staff team developed and approved the LM Pandemic Response, to fulfill the requirements in the following:
  - "Pandemic and All-Hazards Preparedness Reauthorization Act" (Public Law [PL] 113-5)
  - "Pandemic and All-Hazards Preparedness and Advancing Innovation Act" (PL 116-22)
  - "Pandemic and All-Hazard Preparedness Act" (PL 109-417)
  - The *National Strategy for Pandemic Influenza Implementation Plan*
- The joint *LM and LMS Recovery Plan* identified various steps in which limited operations can resume based upon a variety of factors. The plan defined four progressive stages to move from maximum telework and only mission-essential operations to normal operations. This plan addressed specific controls to manage supplies, the return of the workforce to the workplace, and the social distancing protocols necessary to protect workers.
- Several protective measures were developed and implemented to ensure personnel safety in each facility as staff returned to the office:
  - Social distancing guidelines and policies were implemented over the last few months to allow employees to return to the offices. Those guidelines and policies include at least 6 feet distance between workspaces, a requirement for face coverings, and mandatory temperature checks and health screening questions at all sites.
  - LM implemented maximum occupancy in certain areas (bathrooms, break areas, copy areas, etc.).
  - Additional cleaning services were provided for each of the occupied office locations.
  - Cleaning supplies were provided to each returning employee at their workstation.
  - One-way circulation paths were encouraged.
  - Use of heating, ventilation, and air conditioning (HVAC) systems and evaporative coolers were increased to improve air flow while more permanent solutions were being developed.

- A staff accountability tool was set up online to address the spacing of employees at desks and work areas.
- Management communicated to personnel about the office etiquette expectations.

The LM Pandemic Response Plan provided guidance for staff to consider in planning, preparing, and responding to a potential pandemic. The Pandemic Response Plan provided information and a framework for operational activities focusing on (1) the health and safety of LM and LMS personnel, including subcontractors and vendors, and (2) safely conducting and maintaining LM essential functions and essential supporting activities during a confirmed pandemic. The LM Pandemic Response Plan applied to LM federal employees and LMS contractors. It provided guidance to LM and LMS senior management, personnel, contractors, and vendors and describes actions that might be necessary during a pandemic

The goals of the LM Pandemic Response Plan are to:

1. Provide for the health and safety of LM employees and LMS personnel and collaborate with subcontractors to do the same.
2. Prepare for the potential adverse impacts of a pandemic and mitigate their effects.
3. Communicate pandemic preparedness and response information to all LM and LMS personnel and collaborate with subcontractors to do the same.
4. Exchange information with appropriate stakeholders.
5. During significant, sustained absenteeism from the onsite workplaces, maintain LM essential functions and essential supporting activities.

The Emergency Management team developed and implemented a recovery plan to govern the progression from maximum teleworking (i.e., performing onsite only those activities that are required to maintain critical safety functions) through progressive steps of limited operations, leading ultimately to normal operations. The recovery plan is coordinated to be consistent with federal, tribal, state and local regulations and appropriate technical sources. This included (1) coordination of travel authorizations for mission-essential personnel when travel restrictions were in place and (2) guidelines for face coverings and gathering size. State and local monitoring systems have been established to maintain compliance with local regulations.

Interdisciplinary calls were scheduled to coordinate planning and implementation actions. These included identification of resources (e.g., vehicles, cleaning supplies, personal protective equipment) and the development of job safety analyses to include COVID-19 social distancing controls and travel restrictions. A daily call involving selected LM and LMS personnel was established to review the health status of employees, the issues facing the teams, the resource needs, and the list of actions that require urgent attention.

The plan of the week meeting was adapted to review the need to perform specific activities, particularly when travel is required. This meeting also developed a tool to authorize specific work activities both in the field and the office and ensure adequate emergency management coverage for affected facilities.

Community groups such as the EM Issues Special Interest Group, the Safety Culture Improvement Panel, and the Energy Facilities Contractors Group were networked to discuss

conditions and actions from across the DOE complex. This networking identified best practices. For example, Savannah River National Laboratory learned COVID was spread by local fans. As a result, portable high-efficiency particulate air (HEPA)/HVAC units with ultraviolet-C radiation (UVC) were specified and tested by the Los Alamos National Laboratory and were found to reduce the spread of COVID.

Integrated project teams were established to develop solutions to safely reestablish work activities. The teams used and contributed to the OpEx Program (an operating experience database) to share experiences and learn from others within the DOE community.

Standard program evaluation methods (external assessment, tabletop exercises, after action reports, etc.) were applied to the EM program, which identified several areas requiring improvement. An improvement implementation plan has been developed to use as a working tool to track progress as program documents and processes are developed.

13.2 Resilience Planned Actions and Projected Performance

LM is applying a variety of strategies as an organization to maintain compliance with requirements and to enhance the resilience of infrastructure, operations, and mission execution. The expected impacts of these strategies to future fiscal years is better integration and cross-functional coordination of planned activities. No additional funding beyond what is currently funded is required. The risk of not obtaining this goal is low. The EMS Resilience team will continue working in conjunction with the EM supporting teams, LM's PMO, LMS Asset Management Support, and LMS Facility Management.

Specific measurable goals and milestones for FY 2021 and beyond include:

- Applied Studies and Technology will categorize and rank LM's Uranium Mill Tailings Radiation Control Act sites with conventional covers based on their vulnerability to changes in engineering properties, associated risks to human health and the environment, and suitability for future management as evapotranspiration covers.
- LM will further investigate use of the FEMP TRN tool in FY 2021 to manage risk associated with disruptions in energy and water services.
- Site management will address action items found during Energy Independence and Security Act Section 432 energy and water evaluations on required buildings.
- Reviewing various facilities to standardize the use of self-monitoring surge protectors throughout all the sites.
- Updating the *Site Security Plan*.

The EM program upgrade will continue to ensure the LM program can successfully respond to changing conditions, emergencies, and disruptions in service. The recommended items described below are resource- and budget-dependent.

- Establish an Emergency Operations Center, either virtually or using a current LM office location, as a central location for coordinating response to an operational emergency.

- Issue a final report that summarizes site and programmatic risks from climate change and outlines potential mitigations in FY 2022 in response to a GAO report on LM's Environmental Liabilities.
- Coordinate emergency response with offsite support agencies, and develop MOUs, MOAs, MAAs, and LOAs to ensure local support during an emergency.
- Review the benefits of increasing generator capacity.
- Increase Emergency Operations System capability. Planning will include the utilities and technologies required to allow continued COOP support and 24×7 availability.
- Populate LM Aware with site-specific notification information, including offsite agency notifications, and emergency response organization member notifications. LM Aware is an electronic system that is used to provide emergency notifications and support personnel accountability.
- Obtain telephone bridge line numbers and publish these numbers in procedures so that personnel at multiple locations can receive information updates simultaneously.
- Obtain software that would allow emergency responders at multiple DOE sites to:
  - Share significant events
  - Set mission priorities
  - Create and send emergency notification forms and/or situation status reports
  - Access procedures and checklists electronically
  - Build recovery plans

To address ongoing COVID-19 restrictions with limited operations, the following activities are planned for the upcoming year to assist LM in recovery and returning to full operations:

- Review and evaluate technical position papers that have been published as guides to recovery.
- Evaluate new technologies for application at LM sites that are constrained by current regulation or control. Research permanent solutions to improve airflow in occupied buildings while not requiring increased use of HVAC systems or evaporative coolers. Determine safe ways (e.g., HEPA/UVC filtration in vehicles) to allow additional personnel in vehicles.

Attachment 1

List of Documents Uploaded to the DOE Sustainability Dashboard

- LM Environmental Policy.pdf
- WaterChapter.docx
- S11157_FleetMgt.pdf
- Dashboard Workbook_Biobased Products_SITE NAME.xlsx
- Dashboard Workbook_Sustainable Acquisition Contracts_SITE NAME-1.xlsx
- 20201023 LM Memo Self-Cert Dashboard Data.pdf

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Attachment 2

Projected Performance Charts

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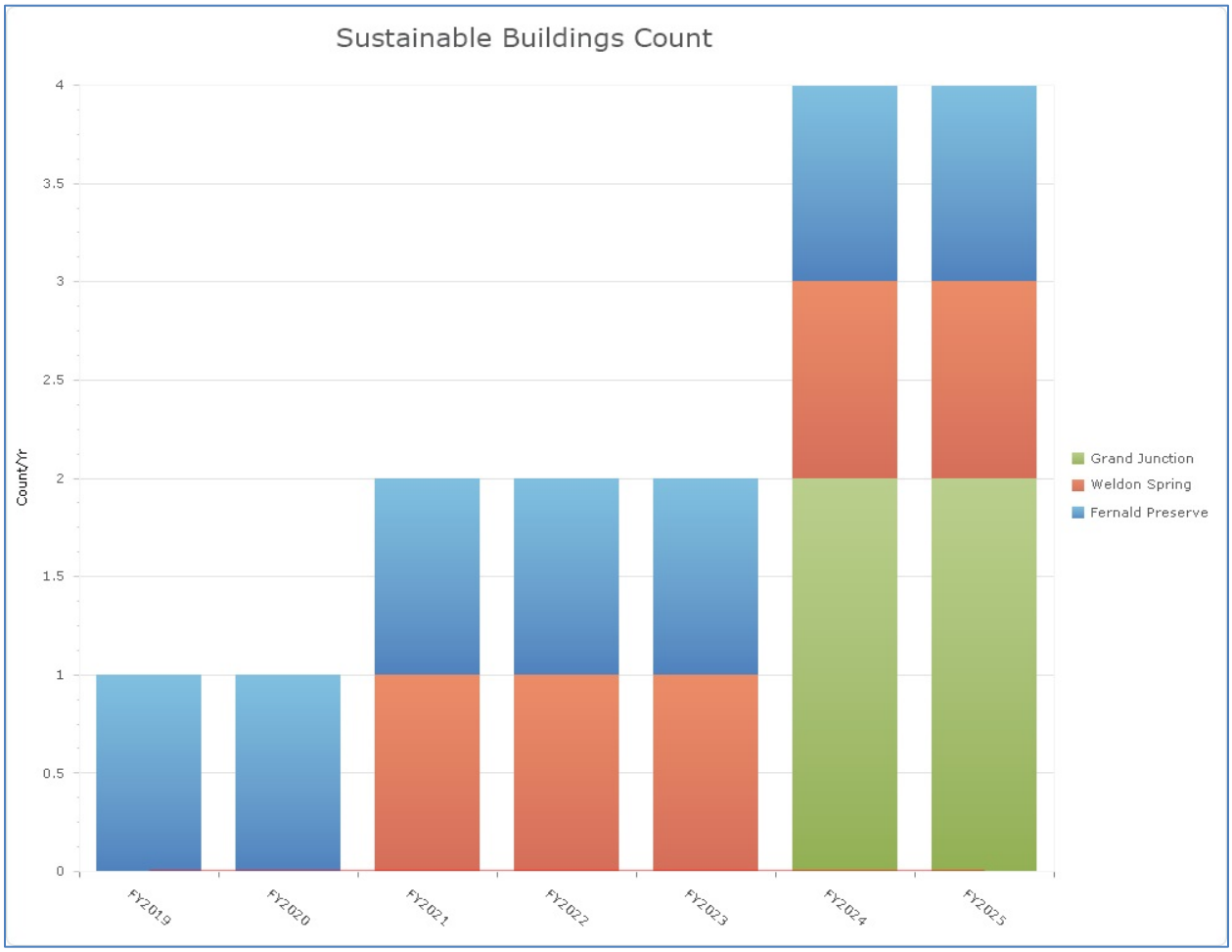
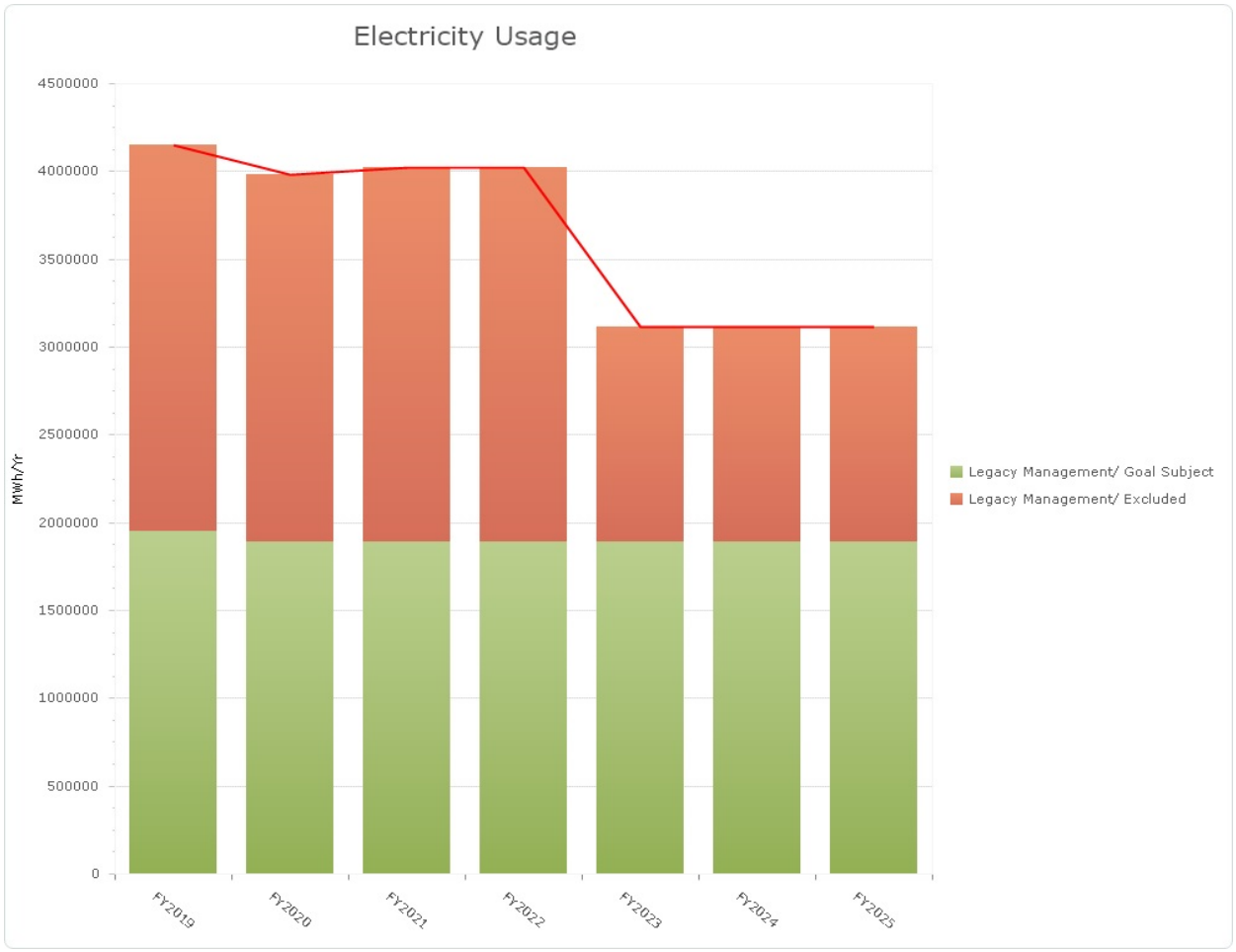
Projected Performance Data

The following graphs were created using the DOE Sustainability Performance Dashboard to demonstrate LM's projected performance over the next five years in sustainable buildings count, electricity usage, potable and non-potable water usage, municipal solid waste and construction and demolition waste.

Sustainable Buildings Projections

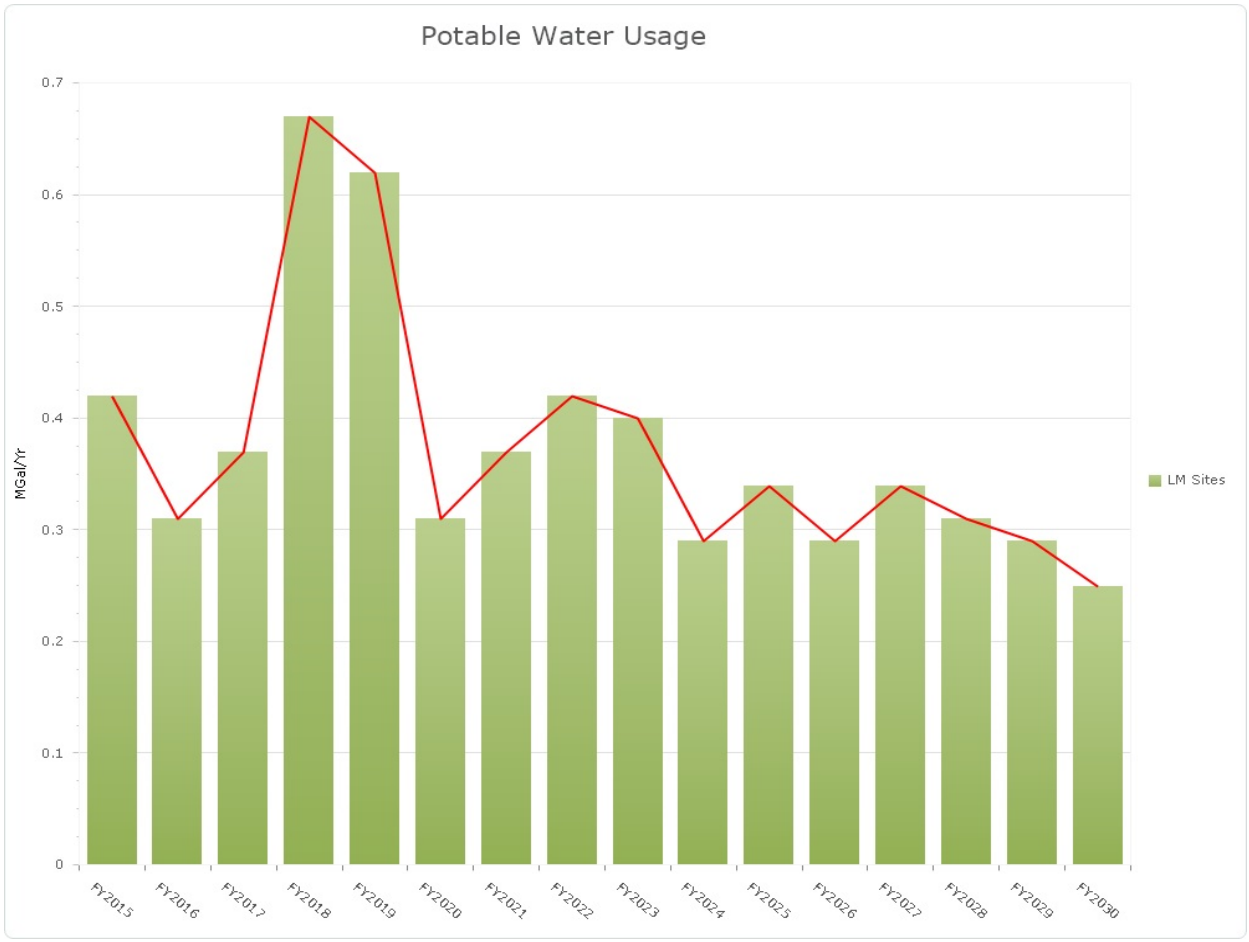


Electricity Projections



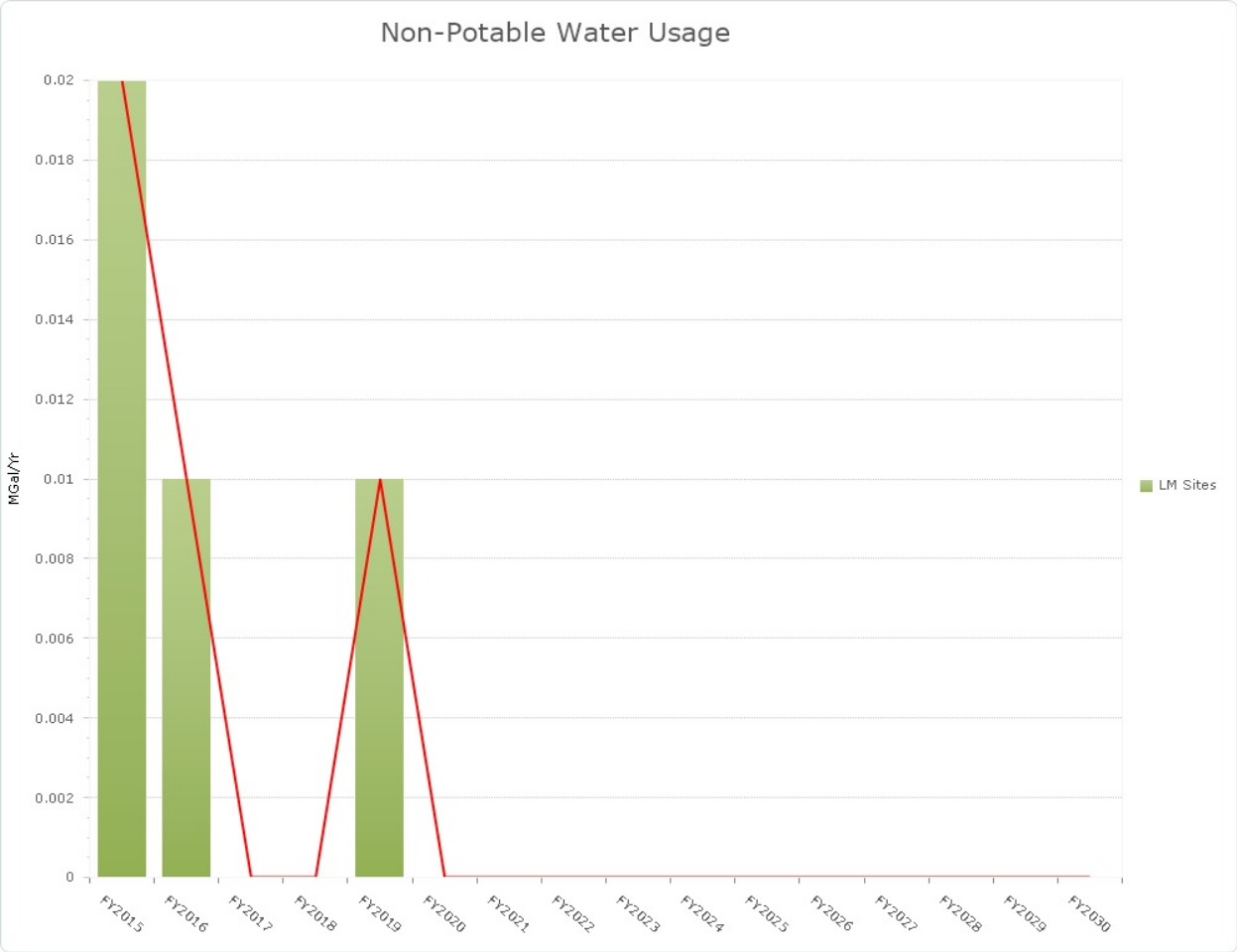
Note:
The red line in the graph indicates a Total Annual Electricity Usage trend.

Potable Water Projections



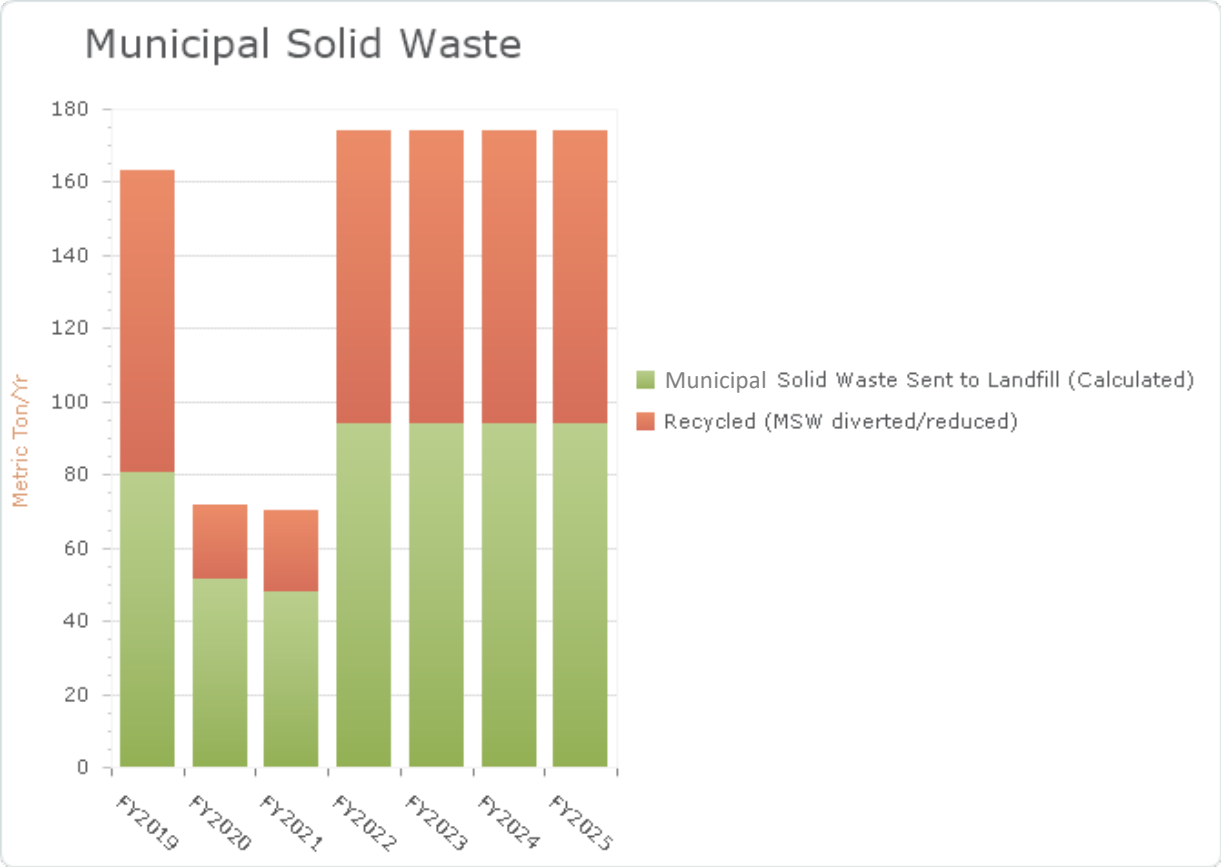
Note:
The red line in the graph indicates a Total Annual Potable Water Usage trend.

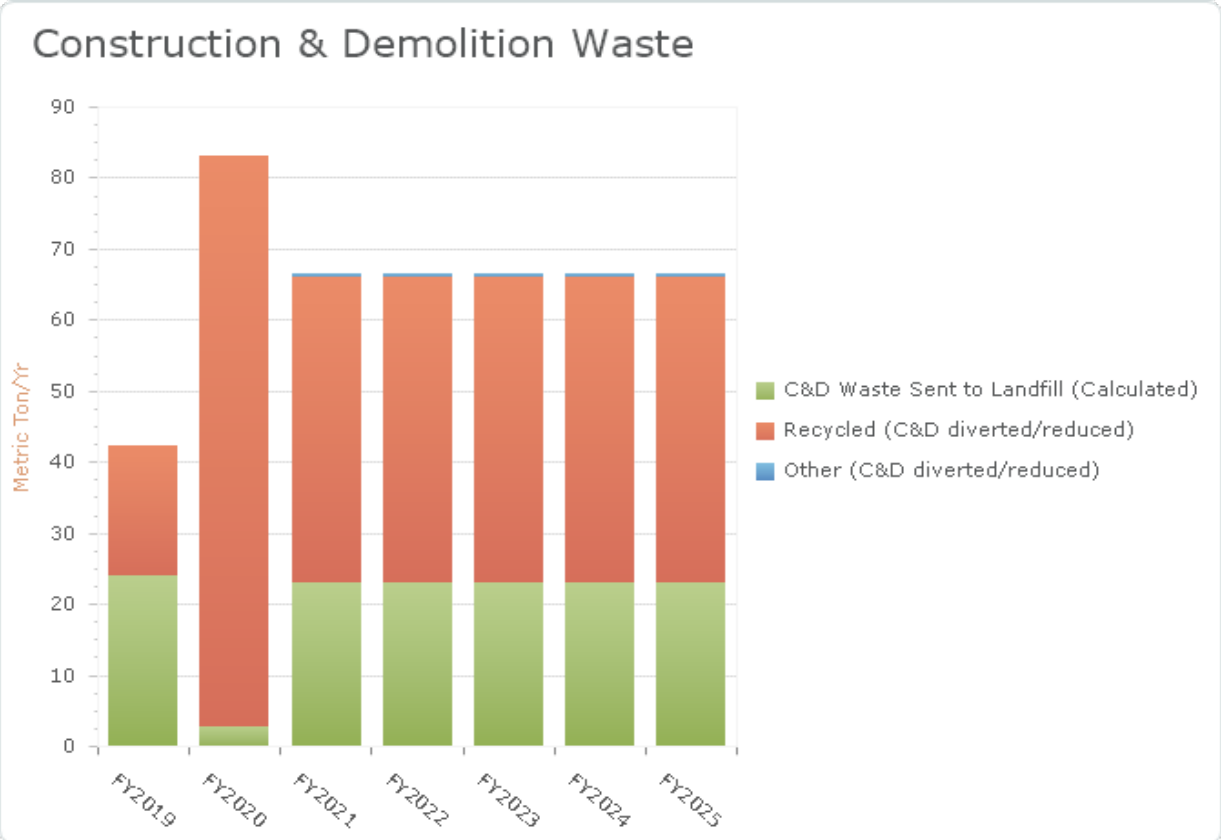
Non-Potable Water Projections



Note:
The red line in the graph indicates a Total Annual Non-Potable Water Usage trend.

Waste Projections





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