

**DOE Order 430.2B Executable Plan for LM
(DOE FEMP Draft)**

Signature for Site Office Concurrence _____



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**DOE ORDER 430.2B EXECUTABLE PLAN
TEAM GOAL SUMMARY**

Please mark the appropriate box below with an "X"

Goal Elements	Plan Meets Goal	Plan Exceeds Goal	Plan Falls Short of Goal	Comments
Energy Efficiency			X	LM currently falls short of the goal and shows an increase of energy usage per square foot; however, this is due to the removal of buildings, and plans are in place to ensure that the goal is met by 2015 (by reducing groundwater treatment).
Renewable Energy	X			
Water		X		
Transportation/Fleet Management		X		
High Performance and Sustainable Buildings	X			

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Contents

1.0	Executive Summary and Overview	1
2.0	Goal Elements.....	2
2.1	Energy Efficiency	2
2.1.1	Current Status.....	2
2.1.2	Site-Specific Goals.....	3
2.1.3	Description of Projects and Activities	4
2.1.4	Funding Plan	4
2.1.5	Milestones for Reaching the Goals	4
2.2	Renewable Energy	4
2.2.1	Current Status.....	4
2.2.2	Site-Specific Goals.....	6
2.2.3	Description of Projects and Activities	6
2.2.4	Funding Plan	7
2.2.5	Milestones for Reaching the Goals	7
2.3	Water.....	7
2.3.1	Current Status.....	7
2.3.2	Site-Specific Goals.....	9
2.3.3	Description of Projects and Activities	10
2.3.4	Funding Plan	10
2.3.5	Milestones for Reaching the Goals	10
2.4	Transportation/Fleet Management.....	11
2.4.1	Current Status.....	12
2.4.1.1	Vehicle Acquisitions.....	12
2.4.1.2	Petroleum Reduction.....	12
2.4.2	Alternative-Fuel Availability and Use	13
2.4.3	Site-Specific Goals.....	14
2.4.4	Description of Projects and Activities	14
2.4.5	Funding Plan	15
2.4.6	Milestones for Reaching the Goals	16
2.5	High Performance and Sustainable Buildings	16
2.5.1	Current Status.....	16
2.5.2	New Buildings and Major Renovations.....	16
2.5.3	Existing Owned and Leased Space	16
2.5.4	Site-Specific Goals.....	17
2.5.5	Description of Projects and Activities	17
2.5.6	Funding Plan	17
2.5.7	Milestones for Reaching the Goals	17

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1.0 Executive Summary and Overview

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is committed to excellence in environmental stewardship. LM's Environmental Management System (EMS) is a comprehensive method for incorporating life-cycle environmental considerations into all aspects of the LM mission. It helps LM use its finite resources wisely, minimize wastes and adverse environmental impacts, and comply with—or even exceed—the laws, regulations, and DOE requirements that protect the environment, public health, and resources. EMS empowers LM to implement sustainable environmental stewardship practices that enhance protection of air, water, land, and other natural and cultural resources affected by DOE operations. Implementing EMS is integral to LM's mission and to achieving excellence.

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

- Executive Order (EO) 13423, Strengthening Federal Environmental, Energy, and Transportation Management, January 26, 2007.
- DOE Order 430.2B, Departmental Energy, Renewable Energy, and Transportation Management, February 27, 2008.
- The Energy Policy Act (EPAAct) of 2005, Public Law 109-58.
- Transformational Energy Action Management (TEAM) Initiative (DOE Headquarters [HQ]).
- DOE Order 450.1A, Environmental Protection Program, Admin Chg. 1, January 3, 2007, or latest revision.
- LM Policy 450.1, Environmental, Safety, and Health Policy, August 28, 2005.

LM's mission is to manage post-closure responsibilities and ensure the future protection of human health and the environment. LM has control and custody of legacy land, structures, and facilities, and is responsible for maintaining them according to DOE long-term plans.

LM has established a team of people to direct and support the goals of EMS. In fiscal year (FY) 2008, LM's EMS Team worked to revise the existing quarterly performance assurance report to include information on activities related to energy, environmental, and transportation management. The resulting *Status Report* encompasses the following:

- Energy efficiency.
- Renewable energy.
- Energy-savings performance contracts projects activities.
- Water conservation.
- Environmentally preferable purchasing.
- Waste management and pollution prevention.

- Sustainable buildings and the Facilities Information Management System.
- Vehicle and fuel management.
- Electronic stewardship.
- Land stewardship.

The Team meets every 2 weeks and provides critical input to senior management. It helps establish direction, develop strategies for the sustainable programs implementation, provide status updates, and facilitate the successful execution of the sustainable programs across the sites. LM will utilize this executable plan to ensure that the energy management provisions outlined in EO 13423, DOE Order 430.2B and the TEAM Initiative are implemented properly.

2.0 Goal Elements

2.1 Energy Efficiency

The EO 13423 energy reduction goal is to reduce energy intensity by 3 percent annually through the end of FY 2015, or 30 percent by the end of FY 2015, relative to the FY 2003 baseline.

The DOE Order 430.2B energy intensity reduction goal is to reduce energy intensity by no less than 30 percent by FY 2015, relative to the FY 2003 baseline.

The purpose of the energy reduction goal is to reduce energy intensity by no less than 30 percent on average by FY 2015, relative to the site's or facility's energy use in FY 2003 (DOE Order 430.2B, 1.b.[1] and Attachment 1, 5.a.). Site-specific goals will be set.

2.1.1 Current Status

LM Energy Consumption

	DOE Goal FY 2015 (BTU/GSF^a)	FY 2003^c (BTU/GSF)	FY 2007 (BTU/GSF)	Energy Reduction (%)
Fernald	234,548	335,069	614,569	-83
Rocky Flats	169,412	242,017	Not applicable. No buildings remaining.	100
Tuba City	2,106,926	3,076,695	3,369,500	-9.5
Total	569,689	813,841	838,334	-3.0

	DOE Goal FY 2015 (BTU/GSF)	FY 2003 (BTU/GSF)	FY 2007 (BTU/GSF)	Energy Reduction (%)
Energy w/o RECs ^b	569,689	813,841	838,334	-3.0
Energy with RECs	569,689	813,841	828,610	-1.8

Note: All values above denote the site-delivered energy, not the source energy. Purchases began at the end of FY 2007 and will be captured in FY 2008 data.

^aBritish Thermal Units per Gross Square Feet

^bRenewable Energy Credits

^cThe 2003 baseline was adjusted to reflect changes in building square footage and energy usage due to remediation. This will ensure that future comparisons are representative of current conditions.

		2003		2007	
Gross Square Feet		3,127,874		26,374	
Total Buildings Energy Use (MBtu)		813,841		838,334	
ESPC Project or separate Energy Conservation Measure *	Actual or Estimated Energy Saved MBtu/yr	Actual or Estimated Implementation Cost	Expected Year of Implementation	Funding Source (ESPC, UESC, Overhead, GPP, Other)	For ESPCs, indicate expected date of Delivery Order Award
Fernald- Shutting off OSDF valve house ventilation fans and lowering thermostat	1405	5K	FY 2008	Other	-----
Fernald – Lowering thermostat in extraction well pump houses	1417	0K	FY 2008	-----	-----
Fernald – Removal of unneeded street lights	112	0K	FY 2008	-----	-----
Fernald – Turning off lights during day time hours	121	0K	FY 2008	-----	-----
Tuba City – Solar hot-water preheating system	730	510K	FY 2009	LM budget	-----
Tuba City – Installation of deaerator on evaporator feed lines	307	5K	FY 2008	-----	-----

In the initial comparison of the total LM energy intensity in FY 2007 to the FY 2003 baseline, the energy consumption per gross square foot was 145 percent higher. The increase is attributable to the following causes:

- The Fernald and Rocky Flats sites were remediated. Consequently, the building area at Fernald was reduced from 698,000 square feet to 24,000 square feet, though groundwater cleanup, the primary user of energy, continued. Furthermore, all buildings at Rocky Flats were removed.
- Energy use at Tuba City increased in proportion to the quantity of water being treated due to improved on-stream time.

The FY2003 baseline was adjusted to remove facilities and energy used by buildings that no longer exist. This will ensure that future comparisons are representative of current building conditions. DOE-LM will be reporting all facilities and energy usage as one site known as DOE-LM. The following tables show historical and current usage.

	DOE Goal FY 2015 (BTU/GSF)	FY 2003 (BTU/GSF)	FY 2007 (BTU/GSF)	FY 2008 (BTU/GSF)
DOE-LM Total	569,689	813,841	838,334	640,757

	DOE Goal FY 2015 (BTU/GSF)	FY 2003 (BTU/GSF)	FY 2007 (BTU/GSF)	FY 2008 (BTU/GSF)
DOE-LM Total				
Energy w/o RECs	569,689	813,841	838,334	640,757
Energy with RECs	569,689	813,841	828,610	636,748

2.1.2 Site-Specific Goals

LM site-specific goals are to exceed the goals specified in DOE Order 430.2B, which includes the TEAM Initiative, and EO 13423.

2.1.3 Description of Projects and Activities

LM sites will meet or exceed the energy goal by (1) maximizing the use of on-site renewable energy; (2) ensuring that newly constructed buildings are very energy-efficient; and (3) installing metering that is needed at Fernald, shutting down well pumps as the groundwater remediation is completed there, slowing down the operation of Fernald's Converted Advanced Waste Water Treatment facility as the need for groundwater treatment declines, and systematically implementing energy retrofits.

2.1.4 Funding Plan

Current operating expenses will fund the energy-efficiency measures' implementation. If necessary, the baseline change control process will be used to request additional funding.

2.1.5 Milestones for Reaching the Goals

As groundwater remediation concentrations are met at the Fernald Preserve, there will be a reduction in energy as the extraction wells are gradually shutdown. This gradual reduction is expected to achieve the goal.

2.2 Renewable Energy

The EO 13423 renewable energy goal is to have at least 50 percent of the current renewable energy purchases come from new (after January 1, 1999) renewable sources and—to the extent feasible—to implement on-site renewable energy projects. EO 13423 allows the use of electricity from new renewable energy sources and non-electric renewable energy sources to meet the EO goals.

The EPAct of 2005's renewable energy goal (adopted by EO 13423) is to have a minimum of renewable energy consumption (percentage of annual electric consumption) to be 3 percent for each year from FY 2007 through FY 2009; 5 percent for each year from FY 2010 through FY 2012; and 7.5 percent for each year from FY 2013 forward. The EPAct of 2005 allows only the use of electricity from renewable energy (old and new) to meet the requirement. Non-electric renewable energy sources cannot be used to meet the EPAct requirement.

The on-site renewable energy goal of DOE Order 430.2B is to maximize the installation of on-site renewable energy projects so that by FY 2010, at least 7.5 percent of each site's total annual electricity and thermal consumption is acquired from on-site renewable sources.

2.2.1 Current Status

Nine LM sites have occupied buildings, and several sites that normally go unoccupied use utility-generated line power, thermal energy, or both. LM consumes, but does not directly purchase, electricity or thermal energy at several of the occupied sites because the utilities are included in the leases (or other occupancy agreements).

Small renewable energy projects (solar) are also currently installed at many, mostly remote, LM sites for sampling, data-logging, and telemetry needs where utility power is unavailable or basically inaccessible. While line power is also used at some of these remote sites, it appears that the 7.5 percent renewable energy goal is already met for these sites.

At LM sites that directly purchase electricity, green power¹ is being bought wherever utility companies offer it. Essentially, purchasing green power from utility companies is like purchasing renewable energy credits; however, buying green power does not involve the buying, selling, and trading of renewable energy certificates. Green power is purchased in blocks of 100 kilowatt hours per month (kWh/mo).

The site-specific status at the end of FY 2008 and proposed site evaluations for FY2009 are as follows:

LM On-Site Self-Generated and Purchased Renewable Energy

Site ^a	Electricity Purchased in FY 2007 (MWh)	Electricity Purchased in FY 2008 (MWh)	On-Site Electricity RE Project FY 2008 (MWh)	Green Power Purchased in FY 2008 (MWh)	Projected Power from On-Site Electricity RE Project FY 2009 (MWh)	Projected Green Power Purchases in FY 2009 ^e (MWh)	Evaluate in FY 2009 for On-Site Electricity RE Project(s)?
Mound Site ^b	2892.4	2118.5	-----	14.6 (0.6%)	-----	175.2 (8%)	Yes
Fernald Site ^c	4102.7	5235.0	-----	15.2 (0.3%)	-----	182.4 (3.5%) Evaluate additional purchase	Yes
Tuba City Site	2197.8	2020.0	Solar thermal system being installed that will replace portion of electricity now used to produce heat.	-----	-----	Evaluate purchase	Yes
Grand Junction Disposal Cell (Cheney Site)	16.4	17.3	-----	14.4 (88%)	-----	14.4 (88%)	Yes
Monticello Site	54.6	57.1	-----	5.2 (9%)	-----	9.6 (17%)	Yes
Shiprock Site	43.9	77.1	-----	Green power not available	-----	-----	Yes
Monument Valley Site	4.9	4.9	-----	Green power not available	-----	-----	Yes
Rifle Site	1.2	7.9	-----	-----	-----	Evaluate purchase	Yes
Rocky Flats Site	17.0	17.0	0.7 (100%) No utility power as of 10/08.	-----	0.7 (100%)	-----	No
SOARS ^d telemetry systems installed at various sites.	0	0	6.5 (100%)	-----	6.5 (100%)	-----	No

^aThis listing does not include the locations where the energy cost is included in a DOE lease or other occupancy arrangement. Renewable energy projects will be considered under the Sustainable Buildings program when the lease/occupancy arrangement expires and a new lease/occupancy arrangement is developed. This listing also does not include sites that do not consume energy. These sites may be considered for a renewable energy project under the Beneficial Land Reuse program.

^bMound site was EM site in FY 2008, except for Building 126, which was LM building. However, all Mound site utilities paid through LM budget in FY 2008, and shown in Table. Mound site will transfer to LM responsibility in FY 2010 or 2011.

^cFernald site was EM site in FY 2008. However, all Fernald site utilities, and on-site geothermal project completion paid through LM budget in FY 2008, and shown in Table. Fernald site will transfer to LM responsibility in FY 2009.

^dSOARS is acronym for "System Operation and Analysis at Remote Sites". On site solar energy is supplied by 10-20 watt solar panels powering telemetry, and data logging. Total SOARS MWh based on solar panel rating x 365 days/yr x 24 hrs/day.

^eGreen power purchases for FY2009 based on continuing current monthly commitment with utility provider green power programs.

¹ Green power is a type of renewable energy that is most beneficial to the environment. The U.S. Environmental Protection Agency (EPA) defines *green power* as "electricity produced from solar, wind, geothermal, biogas, biomass, and low-impact small hydroelectric sources" and states that "customers often buy green power for avoided environmental impacts and its greenhouse gas reduction benefits" (EPA, *Green Power Defined*, <http://www.epa.gov/greenpower/gpmarket/index.htm>, accessed November 13, 2008).

FY 2007 Electrical Consumption= 2563 MWH				
	FY 2007 Energy Produced (MWH)	FY 2007 Energy Produced (Million Btu)	RE as a Percentage of Electricity Use	RE as a Percentage of Energy Use (includes non-electric)
Electricity from Solar	6.5	0	0.07%	0.06%
Electricity from Wind	0	0	0	0
Renewable Thermal Energy	0	0	0	0
On-Site Total	6.5	0	0.07	0.06%
Purchased RECs from New Renewable Source	0	0	0	0
Total	6.5	0	0.07%	0.06%

Renewable Energy/Thermal Energy Technology including RECs	System Size (capacity)	Total MWh/yr	Renewable Energy Initial Project Capital Cost	Funding Source (ESPC, UESC, PPA, Other)	Expected Year of Implementation
Tuba City site – Solar thermal	2 MBTU/day	300	\$510,000	Other	FY 2009
Fernald site – Geothermal	333,000 BTU/day	48	\$369,000	Other	FY 2008
Rocky Flats site – solar electric	2,000 W	0.7	25,000	Other	FY 2008
Green Power	N/A	49.4	N/A (6,720/yr operating budget)	Other	FY 2008
SOARS	750 W	6.5	25,630	Other	FY 2007
Distributed Generation Electrical systems* at sites to be evaluated in accordance with this executable plan.		717	1,500,000	Other	FY 2009, FY 2010
Distributed Generation Thermal systems* at sites to be evaluated in accordance with this executable plan.	604 MBTU/yr		\$250,000	Other	FY2010
Additional Green Power purchases where on-site renewable energy project not feasible	N/A	50	N/A (7,000/yr operating budget)	Other	FY 2009, FY 2010

*Electrical and Thermal renewable energy distributed generation systems will be reported separately after feasibility evaluations are performed and systems are selected. Current values are estimated savings.

2.2.2 Site-Specific Goals

LM site-specific goals are to meet or exceed the goals specified in DOE Order 430.2B, which includes the TEAM Initiative, and EO 13423. The main objective is to maximize the installation of on-site renewable energy projects, where technically and economically feasible, so that at least 7.5 percent of each site's annual electricity and thermal consumption will be acquired from renewable energy by the end of FY 2010. The LM sites will be evaluated to determine the feasibility of this goal, as described in the next section.

Where on-site renewable energy projects are not feasible, a waiver will be requested; in addition, the purchase of more utility-supplied green power will be considered.

2.2.3 Description of Projects and Activities

LM sites will meet or exceed the energy reduction goal by (1) maximizing the use of on-site renewable energy, (2) screening facilities to see where on-site renewable energy projects would be technically and economically feasible, and (3) purchasing green power where available.

The RE screening process identifies sites for which no further evaluation is needed, and prioritizes the sites to be evaluated. The following evaluation approach will be implemented:

- Sites with on-site renewable energy that provides at least 7.5 percent of energy needs already meet goals and need not be evaluated further, unless further evaluation is done as part of a land reuse evaluation. Sites where DOE has only leasehold interest need not be evaluated until an existing lease is up for renewal or modification, or a new leasehold is being acquired. The renewable energy evaluation will be conducted under the Sustainable Buildings Program.

2.2.4 Funding Plan

The feasibility evaluations for Fernald will be the most complex because the renewable energy projects there will need to be big if the sites' goals are going to be met. It is estimated that site-operations, engineering, cost-estimating, and purchasing staff will be needed to conduct these evaluations, and the evaluations will take several months to complete.

Small sites with low electricity consumption will likely be simpler to evaluate, and their renewable energy projects are expected to be small, distribution systems. There are a number of these systems installed at the western LM sites, and it will take personnel less time to perform evaluations there since those sites are smaller than many eastern ones. Also, existing designs will likely serve as conceptual designs.

Currently, this evaluation work is expected to be included in the Legacy Management Support contract budget.

On-site projects determined to be feasible will be funded through the baseline change proposal process.

2.2.5 Milestones for Reaching the Goals

The feasibility evaluations will be completed by September 30, 2009. Any renewable energy projects that are determined feasible will be scheduled to be completed by September 30, 2010, with specific milestones developed in accordance with the baseline change proposal process.

2.3 Water

The purpose of this goal is to reduce potable water use intensity (WUI) at applicable LM sites by no less than 16 percent by the end of FY 2015, relative to potable water use in FY 2007.

2.3.1 Current Status

The LM sites were assessed against EO 13423 and DOE Order 430.2B requirements. LM consumes, but does not directly purchase, water at several of the occupied sites because the utilities are included in the leases (or other occupancy agreements). Potable water use activities at four sites were determined to be applicable. FY 2007 baseline water use information was established for the individual and combined sites. The combined-sites total potable water consumption during the baseline period (as adjusted) was 1,499,643 gallons, and the corresponding WUI was 141.76.

FY 2008 WUI data were compiled, and performance toward the reduction goal was evaluated. The LM combined-sites performance for FY 2008 far exceeded the potable WUI percentage reduction goal by reducing WUI by 28.6 percent, as compared to the FY 2007 baseline period (as adjusted at the end of FY 2008 for the inclusion of an additional site). This reduction resulted in a total combined-site savings of 428,875 gallons of potable water during FY 2008. The next table provides the individual and combined-sites water use and intensity information for the baseline and FY 2008 periods.

The following LM sites are included in this goal:

- Fernald Preserve—FY 2007 and FY 2008 potable water use information was determined from metering information provided by the water utility. The utility meter at Fernald covers water use at the entire 1,000-acre site. Water use includes landscaping and the support of a building that conducts water-treatment and laboratory activities. The construction of a Leadership in Energy and Environmental Design (LEED) Program platinum-certified visitors center was completed during the summer of 2008; water use from this facility is separately metered and will be included in future FY usage reports.
- Monticello Site—FY 2007 and FY 2008 potable water use was estimated at this site by approximating reasonable usage volumes, known water use activities, and possible activity frequencies. This site consists of a small office trailer; one person currently works at the site. Water use at this site is minimal and is basically limited to a toilet, a sink, and an outdoor faucet. There are no landscaping improvements currently planned. A utility meter exists at the Monticello site, but meter readings are not taken by the utility company. On-site staff began taking meter readings in October 2008.
- Grand Junction Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site—Water utility services are not available at this site; water is hauled to the site to operate site toilets and sinks in an office building and a sample-preparation building. The water is also used for equipment decontamination. The site is intermittently open. FY 2007 and FY 2008 potable water use was determined at this site by calculating volumes of water hauled to the site as reported on service invoices.
- Old Rifle UMTRCA Title I Processing Site—Water utility services are not available at this site; water is hauled to the site to operate the toilet and sink in a small field office trailer that was installed in June 2008. The office is used only periodically. Potable water use was determined at this site for FY 2008 by using service invoices to estimate the volume of water hauled to the site.

LM Total Water Consumption Intensity (incl. goal metric sites)

Applicable LM Site	Total Building(s) Size (GSF ^a)	Total Potable Water Used (gallons)		Change in Water Use From FY 2007 to FY 2008 ^b (gallons)	Water-Use Intensity (WUI) Number ^a (gallons/GSF)		Percentage WUI Change ^c from FY 2007 to FY 2008
		FY 2007	FY 2008		FY 2007	FY 2008	
Fernald Preserve Site	7,200	1,477,076	996,641	480,435 (use reduction)	205.15	138.42	32.53% (use reduction)
Grand Junction Disposal Site	1,934	10,900	63,100	-52,200 (use increase)	5.64	32.63	- 478.55% (use increase)
Monticello Site	725	9,122	8,482	640 (use reduction)	12.58	11.70	7.00% (use reduction)
Old Rifle Processing Site	720 (N/A ^d to original baseline, added during adjustment)	2,545 ⁴	2,545	N/A (no actual use in FY 2007)	3.53 ⁴	3.53	0%

Combined-Sites Total	10,579^e	1,499,643^e	1,070,768	428,875 (use reduction)	141.76^e	101.22	28.60% (use reduction)
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^aCalculated by dividing the total potable water use (gallons) during reporting period by total building(s) size (gross square footage). A smaller WUI number reflects fewer gallons used per GSF. A decrease in comparable WUI numbers represents a reduction in water use.

^bFY 2007 total usage minus FY 2008 usage.

^cPercentage WUI = $\frac{\text{FY 2007 Baseline}_{(\text{Adjusted FY 2008 End})} \text{ WUI} - \text{FY 2008 WUI}}{\text{FY 2007 Baseline}_{(\text{Adjusted FY 2008 End})} \text{ WUI}} \times 100\%$. A positive percentage WUI change represents a reduction in water use.

^dAdded to adjust baseline for the new inclusion of the Old Rifle Processing Site.

^eCombined-Sites FY 2007 Baseline_(Adjusted FY 2008 End) information includes the actual baseline (FY 2008) information for the Old Rifle Processing Site. There is no change in the Old Rifle Processing Site's WUI from FY 2007 to FY 2008.

The FY 2008 total combined-sites potable water use savings was largely based on the 480,435-gallon use reduction at the Fernald Preserve, due to decrease in water needed for recharging existing wetlands, establishing new wetlands, and an increase in rainfall.

LM is also looking for ways to increase the use of non-potable water sources, such as reclaimed, recycled, and gray water, for appropriate applications.

Additionally, LM has developed and implemented a program to adhere to the preferential purchase of water-efficient products and services that use sustainable environmental practices. Where applicable, WaterSense-labeled products are purchased, and irrigation contractors who are certified through a WaterSense-labeled program are procured.

2.3.2 Site-Specific Goals

During the first year of the LM Water Conservation Program's implementation, it achieved the goal for the end of FY 2015: to ensure that the required potable water-reduction benchmark is met. Goal performance will continue to be based on the four combined LM sites. Other LM sites may be included in the future if water use activities change or if additional sites are transitioned into the LM Program. A separate, newly developed Water Conservation Program was created for LM EMS to ensure that improvement opportunities are identified, assessed, implemented, and tracked in support of meeting the LM water-reduction goals. The Water Conservation Program's

implementation is integrated through EMS and long-term surveillance and maintenance plans for planning, operating, and acquiring systems, as appropriate.

2.3.3 Description of Projects and Activities

The LM Water Conservation Program, which is relatively new, will continue to be developed. To date, efforts have been focused on preparing a program implementation plan, identifying applicable LM sites, establishing a data management system, developing a baseline, identifying FY 2008 water use, and calculating FY 2008 performance. Further implementation of the program will ensure that goals continue to be met.

Internal water audits will be conducted at the four LM sites during calendar year (CY) 2008 to delineate site-specific potable water use. LM intends to evaluate existing metering and establish standard water metering at buildings on the four included sites, in accordance with applicable requirements. This metering initiative is expected to be completed during FY 2009.

The internal audit information will be used to identify potential water conservation measures for each site. These measures will be assessed and prioritized based on individual and overall combined-sites performance needs, and all water conservation measures will be life-cycle cost-effective. Once needs are prioritized, approved water conservation measures will be implemented, and water savings and cost savings will be tracked. These initiatives will probably focus on the Fernald Preserve, which accounted for approximately 93 percent of potable water use at the included LM sites during FY 2008. Future efficiency improvements will likely involve identifying and mitigating water loss from distribution piping systems and improving landscaping equipment and practices at the site. A water-source change may also be appropriate for equipment decontamination at the Grand Junction Disposal Site.

2.3.4 Funding Plan

LM current operating expenses and the overhead (minor construction) budget will fund the implementation of future water conservation measures and projects. If necessary, the baseline change control process will be used to request additional funding. LM will consider the order of funding as described in DOE Order 430.2B prior to initiating water efficiency improvements. Water conservation measures will be assessed to ensure that they are life-cycle cost-effective.

Water utility contracts, such as Energy Savings Performance Contracts (ESPCs) and Utility Energy Services Contracts (UESCs), are currently not available through the water utilities that service the Fernald and Monticello sites. The use of such contracts is not an option at the Grand Junction Disposal and Old Rifle Processing sites because these sites do not use water utility services.

The LM Water Conservation Program will reassess opportunities to establish water utility contracts in the future. The implementation of life-cycle cost-efficient, privately funded efficiency improvements (if available) will be prioritized.

2.3.5 Milestones for Reaching the Goals

The milestone for completing the water audits is the end of CY 2008. The milestone for completing the LM metering initiative is the end of FY 2009. Milestones for completing approved water conservation measures will be identified once potential efficiency opportunities

have been evaluated and prioritized; some minor efficiency measures may be implemented in FY 2009.

The executable plan will be updated annually to address issues, additional projects (including water conservation measures not identified in this plan), and changes to building-use functions (including increases or decreases in gross square footage). These plans may also be updated if new policy requirements apply or if concerns arise.

As required by the guidance for preparing the executable plan, shown below, shows various metrics.

Required Metrics Table

ESPC Project or Separate Energy Conservation Measure ^a	Actual or Estimated Water Saved (kgal/yr)	Expected Year of Implementation	Actual or Estimated Implementation Cost	Funding Source (ESPC, UESC, Overhead, GPP, Other)
Installation of standard meters at buildings at the four identified LM sites.	0	FY 2009	\$40,000	Overhead; see discussion in Section 2.3.4.
Potable water use audits at the four identified LM sites.	0	CY 2008	\$15,000	Overhead; see discussion in Section 2.3.4.
Individual site water conservation measures; will be assessed following the completion of the water audits. Specific initiatives TBD ^b .	TBD ^b	FY 2009–FY 2015	TBD ^b	Overhead; see discussion in Section 2.3.4.

^aList the total project for individual ESPCs, not each individual ECM.

^bTBD = To Be Determined

2.4 Transportation/Fleet Management

The EO 13423 transportation/fleet management goals, against the FY 2005 baseline are to reduce the fleet’s total consumption of petroleum products by 2 percent annually, or 20 percent by the end of FY 2015; to increase the total fuel consumption that is non-petroleum-based by 10 percent annually; and to use plug-in hybrid vehicles when they are commercially available and life-cycle cost-effective.

The DOE 430.2B transportation/fleet management goals are to achieve the petroleum reduction goal through (1) reducing vehicle miles traveled through such methods as trip consolidation, videoconferencing and Web conferencing, mass transportation, and agency shuttles; (2) increasing the fleet’s fuel economy overall by acquiring vehicles with better fuel economy; (3) “right sizing” the fleet; (4) employing energy-efficiency strategies (such as low-rolling resistant tires and synthetic oil); and (5) considering the use of plug-in hybrid electric vehicles and electric-drive vehicles to the extent feasible and in accordance with applicable statutes, regulations, executive orders, and DOE guidance.

The EPC Act of 1992 includes the requirement that 75 percent of vehicles acquired for federal agencies’ covered fleets be alternative-fuel vehicles (AFVs). In addition, the EPC Act of 2005 requires each federal agency to use alternative fuel in all of its dual-fuel vehicles (such as ethanol flex-fuel vehicles or bi-fuel vehicles) except when the vehicles have received a waiver from DOE.

2.4.1 Current Status

2.4.1.1 Vehicle Acquisitions

LM's fleet of vehicles currently consists of 42 General Services Administration (GSA) leased vehicles and one special purpose owned vehicle:

- 24 E85 vehicles
- 7 diesel vehicles
- 12 unleaded gasoline vehicles (3 LD and 9 MD)

LM's current strategy, which consists of acquiring an alternative-fuel vehicle when a fleet vehicle needs to be replaced, exceeds the EPA Act of 1992's requirement of 75 percent AFV acquisition.

2.4.1.2 Petroleum Reduction

LM exceeded its requirement to reduce petroleum use by 2 percent annually; it reduced petroleum use by 11 percent in FY 2008, relative to FY 2007. Total petroleum usage in FY 2008 was 32,389 gallons, compared to 36,570 gallons in FY 2007.

LM is employing efficiency strategies and with continued implementation of the following strategies, a minimum 2% annual reduction in petroleum usage is projected to continue for FY 2009 through FY 2015.

- Employees are encouraged to use the Fernald/Mound shuttle, instead of their personal vehicles, and an expansion of the shuttle service is being considered.
- The purchase of Gators and GEMs, which use less fuel than conventional vehicles, is also being considered. An electric golf cart has already been purchased for use on the Pinellas site.
- LM is committed to reducing miles through such methods as trip consolidation. A column is being added to the vehicle log to identify the number of passengers in each GSA vehicle, so that trip-consolidation practices can be tracked.
- LM's shuttle service utilizes an E85-fuel, seven-passenger vehicle to transport employees between Fernald and Mound.
- Another way to reduce vehicle miles is videoconferencing. LM has established videoconferencing capabilities at its seven major sites around the country.
- LM's plan to increase the fuel economy of its fleet overall involves continually working with GSA to provide LM with smaller vehicles, plug-in hybrid vehicles, or other advanced-technology vehicles. LM's efforts to identify the most fuel-efficient vehicle for a given task include keeping track of miles driven, fuel used, and vehicle usage.

LM's current strategy, which consists of acquiring an alternative-fuel vehicle when a fleet vehicle needs to be replaced, exceeds the EPA Act of 1992's requirement of 75 percent AFV acquisition. This strategy will be applied on all acquisitions and will only be circumvented rarely when special situations occur. It is projected that the AFV acquisition will exceed 75% of purchases in any given year through FY 2015.

2.4.2 Alternative-Fuel Availability and Use

LM's alternative-fuel (AF) use is predominantly E85. In FY 2008, LM used 817 gallons of E85 AF. Usage in FY 2007 was 112 gallons E85 AF, resulting in an increase of 729 percent, in usage of E85 fuel from FY 2007 to FY 2008. The FY 2008 reduction exceeds the EO 13423 requirement of increasing non-petroleum-fuel consumption by 10 percent annually. However, meeting the 10 percent annual benchmark hereafter will be more challenging. LM will continue working with GSA to increase the number of alternative-fuel vehicles in the fleet.

LM has received AFV waivers for all E85 capable vehicles in FY 2008, as there are limited alternative-fuel stations within 5 miles of LM sites. Future AFV waivers are projected to be required based on availability of E85 fueling stations in the remote LM site areas. This need will be assessed annually and waivers applied for as needed. LM plans to use the DOE website to closely monitor the availability of the alternative-fuel stations. LM is working to increase awareness of the need to use E85 if available. Awareness training will be provided, and a map of E85-fuel locations will be given to fleet-vehicle drivers. E85 vehicles will be designated with stickers so that drivers know what fuel to use. Based upon these actions, LM is projecting to continue a 10% increase annually in AF usage through FY 2015.

Biodiesel fuel has not been previously used due to availability, fuel consistency and fuel quality. Based on current infrastructure, fuel availability and fuel quality, biodiesel fuel (B20) is not projected to be utilized in FY 2009. Use of B20 in FY 2010 through FY 2015 will need to be reassessed annually to determine if infrastructure and fuel is available. LM will monitor the DOE website to determine B20 availability. Once B20 fuel is available usage will increase a minimum of 10 percent per year through FY 2015.

Working within the "Clean Cities" coalition; promotion of alternative fuels, use of advanced vehicles, use of fuel blends, use of hybrid vehicles and idle reduction of vehicles will proceed. The continued education of vehicle users will be key in the success of these actions.

Current total LM vehicle inventory is 43 vehicles, consisting of: 3 sedans, all of which are E85 capable; 11 Light Duty (LD) Sport Utility Vehicles (SUVs) of which 9 are E85 capable and 2 are gasoline only; 28 Pickups (PUs), of which 12 are LD E85 capable, 1 is LD gasoline only, 8 are Medium Duty (MD) gasoline only and 7 are diesel; and 1 van, which is MD gasoline only.

Vehicle acquisition plans, by Fiscal Year are provided below:

Fiscal Year	Vehicle to be Replaced	New Vehicle Leased
2009	- 1 E85 Sedan - 3 LD E85 SUVs - 2 MD Diesel PUs	- 1 Hybrid Sedan - 3 LD E85 SUVs - 2 MD B20 Diesel PUs
2010	- 1 E85 Sedan - 1 LD E85 SUV - 2 LD E85 PUs	- 1 Hybrid Sedan - 1 LD E85 SUV - 2 LD E85 PUs
2011	- 1 LD E85 SUV - 1 LD E85 PU - 2 MD Gas PUs - 1 MD Diesel PU	- 1 LD E85 SUV - 1 LD E85 PU - 2 MD E85 PUs - 1 MD B20 Diesel PU

Fiscal Year	Vehicle to be Replaced	New Vehicle Leased
2012	- 2 LD E85 SUVs - 2 MD Gas PUs - 1 MD Gas PU	- 2 LD E85 SUVs - 2 MD E85 PUs -1 MD E85 PU
2013	- 2 LD E85 SUVs - 1 E85 Sedan - 2 MD Gas PUs - 2 LD Gas PU - 1 MD Gas Van	- 2 LD E85 SUVs - 1 Hybrid Sedan - 2 MD E85 PUs - 2 LD E85 Pus - 1 MD Van
2014	- 1 LD E85 SUV - 2 LD E85 PUs - 2 MD Gas PUs - 1 MD Diesel PU	-1 LD E85 SUV - 2 LD E85 PUs - 2 MD E85 PUs - 1 MD B20 Diesel PU
2015	- 1 LD E85 SUV - 3 LD E85 PUs - 2 MD Gas PUs - 1 MD Diesel PU	- 1 LD E85 SUV - 3 LD E85 PUs - 2 MD E85 PUs - 1 MD B20 Diesel PU

LM mission is to manage post-closure responsibilities and ensure the future protection of human health and the environment. Currently LM is responsible for monitoring, testing, inspecting and maintaining 47,788 acres of land at 61 sites located throughout the United States. LM’s fleet of 43 vehicles is located at 8 sites in 7 states and is a necessary element in the success of the LM mission and associated activities.

By 2015 all gasoline sedans, LD SUVs and LD PUs will be replaced with hybrid and E85 capable vehicles. While no impediments are anticipated in the acquisition of these vehicles, the availability of E85 fuel remains an issue due to the remote areas most of these vehicles operate. Additionally, the availability of B20 diesel for newly acquired MD diesel PUs is an issue for the same reasoning. LM will monitor the DOE website to determine E85 and B20 availability. Once B20 fuel is available usage will increase a minimum of 10 percent per year through FY 2015. The continued education of vehicle users will be key in the success of these actions. All employees shall receive awareness-level training as well as necessary refresher training regarding the EO 13423 vehicle and fuel use goals.

2.4.3 Site-Specific Goals

LM site-specific goals are to meet or exceed the goals specified in DOE Order 430.2B, which includes the TEAM Initiative, and EO 13423.

2.4.4 Description of Projects and Activities

To comply with program goals, the Vehicle and Fuel Use Program Team will maintain a list of vehicles in the LM fleet, monitor the monthly fuel consumption, by vehicle and fuel type, and take appropriate actions to meet program goals for vehicle and fuel use.

All vehicles currently in or acquired for the LM fleet that are capable of using E85 fuel shall use this alternative fuel to the maximum extent practicable. Otherwise, an exemption will be obtained.

Each site with alternative fuel vehicles shall utilize the DOE's Web-based Alternative Fueling Station Locator to identify stations within a 5 mile radius that provide the appropriate fuel. Where no stations exist, site management shall investigate possible solutions through private-sector alternative-fuel distributors, including existing fuel vendors and stations.

GSA determines when GSA leased vehicles should be replaced, based on vehicles' age and mileage. When it is time to replace a vehicle, GSA notifies pertinent fleet management (in this case, the LM contractor). The LM contractor tells GSA what type of vehicle is required, using the following criteria to make that determination:

- The availability of alternative fuel, dual fuel, or hybrid vehicles meeting the job or usage requirements.
- The availability of the appropriate fuel in the areas in which the vehicle will typically operate.

The LM fleet currently has 43 vehicles and consists of medium and light duty pickups, SUVs, and sedans. Four wheel drive pickups and SUVs are the vehicles of preference, necessitated by remote, rough country and job requirements. This vehicle inventory and how each vehicle is used (days used, miles driven, and quantity of fuel purchased) are tracked through GSA's standard tracking system and/or LM's internal fleet management system, which includes fuel purchases using GSA authorized credit cards.

GSA's existing vehicle tracking system will be modified if necessary and used to track fuel use by fuel type and vehicle type. The metrics shall be placed in a spreadsheet so that monthly and year-to-date data can be tracked and sorted for easy comparisons to previous months or years.

LM shall have internal policies that require the accurate tracking of vehicle acquisitions and inventory, mileage, fuel consumption by fuel type, and other relevant data.

LM and GSA will work together to update and maintain the Federal Automotive Statistical Tool (FAST) to reflect the goals of EO 13423. FAST is a Web-based program developed to measure how federal agencies comply with the DOE requirements pertaining to vehicle and fuel use reduction.

LM is required to submit annual vehicle use data, including the type and quantity of fuel used, to DOE-HQ no later than December 31 of each year. DOE-HQ specifies the reporting format and collection methods for data to be submitted.

The Vehicle and Fuel Use Program Team reports quarterly to DOE-LM and contractor management progress toward meeting program goals.

All employees shall receive awareness-level training as well as necessary refresher training regarding the EO 13423 vehicle and fuel use goals; the purpose, scope, and implementation of the Vehicle and Fuel Use Program; and the environmental impact of employees' actions.

2.4.5 Funding Plan

The funding source to implement vehicle and fuel use measures is included in the current operating expenses.

2.4.6 Milestones for Reaching the Goals

The following three steps will be taken to ensure that the goal is met: (1) Status will be tracked monthly. (2) Quarterly reports will identify any challenges to the goal. (3) Appropriate actions will be developed as needed to ensure that the goal is met.

2.5 High Performance and Sustainable Buildings

The DOE 430.2B high performance and sustainable buildings goals are: (1) All new buildings and major building renovations in excess of \$5 million will incorporate the guiding principles of EO 13423 and attain LEED gold certification. (2) Existing buildings that are owned or leased real property must develop and implement a plan to ensure that 15 percent of enduring buildings comply with the guiding principles of EO 13423. (3) Each year, on August 1, the contractor will submit high performance building plans to the appropriate Department Field Element Office; the plans will address how the contractor will ensure that all new construction and renovation projects support the sustainable design/high performance building goals of EO 13423 and statutory requirements, and how existing facilities' maintenance and operation practices support the goals of EO 13423. Such plans must also be aligned with EO 13327 and DOE's real property asset management plan.

2.5.1 Current Status

LM plans to assess its current building inventory with the use of DOE's High Performance Sustainable Building Working Group's (HPSBWG) existing building assessment tool to determine the extent to which the high performance sustainable building guiding principles of EO 13423 are being applied. The assessment will be completed no later than July 31, 2009. The assessment will serve as a baseline for compliance with the 15 percent sustainability target and will assist in identifying potential opportunities for sustainability gains.

2.5.2 New Buildings and Major Renovations

All new DOE-owned buildings and major building renovations in excess of \$5 million will incorporate the guiding principles of EO 13423 in compliance with LM's current design standards. The guiding principles of EO 14323 will be considered for all new buildings and renovations, to the extent practical. The 10,000 square foot Fernald Preserve Visitors Center recently underwent a major renovation and was awarded LEED platinum certification.

2.5.3 Existing Owned and Leased Space

LM's plan to ensure that 15 percent of the existing buildings comply with the guiding principles of EO 13423 is to assess the current existing building inventory totaling 69,792 square feet (excluding the Fernald Preserve Visitor Center) by the end of July 2009. An initial prescreening was performed on all buildings, narrowing down the number of buildings to perform assessments. The assessment tool will be performed on eleven buildings. The Fernald Preserve Visitors Center is approximately 12 percent of LM's current existing building square footage. LM's plans for all procurement specifications and selection criteria for acquiring new leased space to include a preference for LEED silver-certified buildings are currently ongoing. LM currently leases 104,091 square feet. LM is evaluating cost estimates to achieve LEED gold certification with the GSA landlord for the LM Records Storage Facility in Morgantown. The Records Storage Facility will initiate operations in FY 2010.

LM's plans for the renegotiation or extension of existing leases to include, to the extent practicable, lease provisions that support the guiding principles of EO 13423 are under review. In the past and in current retrofit projects within the leased space, LM has incorporated energy-efficient technologies, such as energy-efficient lighting, water-efficient appliances and fixtures, Energy Star products, and LEED-approved sustainable products (e.g., low-volatile-organic-compound paints and recycled-content carpet).

2.5.4 Site-Specific Goals

LM site-specific goals are to meet or exceed the goals specified in DOE Order 430.2B, which includes the TEAM Initiative, and EO 13423.

2.5.5 Description of Projects and Activities

LM sites will meet or exceed the high performance and sustainable buildings goals by (1) ensuring that all new buildings and major building renovations in excess of \$5 million incorporate the guiding principles of EO 13423 and attain LEED gold certification, (2) developing a plan to ensure that 15 percent of existing buildings which are owned or leased real property comply with the guiding principles of EO 13423, (3) maximizing the use of on-site renewable energy, (4) ensuring that newly constructed buildings are very energy-efficient, (5) installing necessary metering, and (6) continuing to implement energy retrofits.

2.5.6 Funding Plan

The baseline change control process will be used to get required funding for renovations needed for existing buildings to meet the 15 percent goal, if the renovations are not covered by existing construction funding. The amount of funding needed to achieve the goal will not be known until the assessments are complete.

2.5.7 Milestones for Reaching the Goals

Approximately 12% of the existing buildings square footage currently meets the Guiding Principles. The remaining existing buildings, totally eleven, will be assessed by July 31, 2009 using the High Performance Sustainable Building Working Group (HPSBWG) Assessment Tool for Existing Buildings. Opportunities for sustainability gains will be identified and funding will be requested to implement the building upgrades, if necessary, in fiscal year 2010. Lease agreements will be modified as renewals come up. The guiding principles will be discussed in any new lease agreements, as needed.