

U.S. DEPARTMENT OF ENERGY OFFICE OF LEGACY MANAGEMENT

FISCAL YEAR
2025-2035
STRATEGIC PLAN

Letter to the Reader

The U.S. Department of Energy (DOE or Department) remains committed to managing our responsibilities associated with the legacy of World War II and the Cold War. This legacy includes radioactive and chemical waste, environmental contamination, and hazardous materials at sites across the United States and the territory of Puerto Rico from nuclear weapons production that contributed to the defense of the nation. The Department has taken significant steps toward fulfilling its commitments to clean up this environmental legacy, and we are protecting those investments with long-term stewardship.



For the past 20 years, DOE's Office of Legacy Management (LM) has been protecting human health and the environment within the communities that made sacrifices for the nation during one of the most critical periods in our country's history. We continue to conduct long-term surveillance and maintenance (LTS&M) at sites where nuclear waste has been disposed, where residual contamination remains, and where passive or active treatment of groundwater contaminated by radionuclides or other contaminants of concern is being conducted.

Since the last LM strategic plan was issued, changing conditions have impacted how we conduct our operations and manage our sites. These conditions include, but are not limited to, the need to adapt to operating in a pandemic, the increasing frequency and intensity of severe weather events, the presence of emerging contaminants of concern, market conditions and supply chain issues, and a growing portfolio of aging infrastructure and facilities. We have and will continue to confront these challenges as opportunities to improve the effectiveness and efficiency of our operations. This version of LM's strategic plan covers fiscal years 2025-2035 and outlines the programs and strategies LM will utilize to complete our mission over the next 10 years.

Our mission is expected to grow significantly with the addition of up to 30 sites by 2035. As organizations complete cleanup, the largest and most severely contaminated challenges remain and represent some of the most complex sites for LM to manage. We remain prepared and positioned to carry out our responsibilities and meet our goals and objectives by growing and sustaining a talented, diverse, inclusive, and performance-driven federal workforce.

Our focus is multifaceted. We continue to ensure post-retirement medical and life insurance benefits for former contractor workers are protected. We are also modernizing our records and information systems to become more efficient and effect a transition to a digital workplace. The importance of the use of electronic systems will continue as we become more mobile and have more remote environmental data collection systems. This increases long-term surveillance and maintenance opportunities; however, it also increases our vulnerability and the imperative to protect our virtual assets. We will maintain our focus on cyber threats and security and ensure our resources are properly deployed to protect our assets.

Our management of a broad and diverse portfolio of land and assets is being performed in a continually changing climate. We continue to identify and adopt emerging scientific information and technical innovation to address potential climate impacts and make site resilience a cornerstone of our operations.

While we have made significant contributions through our commitment to long-term stewardship, we also recognize that the successful execution of our mission depends on connecting and effectively communicating with the public, other government organizations, and tribal partners. Accordingly, public outreach, intergovernmental collaboration, and effective dialogue with tribal partners will remain central to all our work.

We thank you for your sustained interest and support and look forward to the continued involvement of all our stakeholders and tribal partners as LM implements cost-effective solutions to address the challenges that lie ahead.

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Organizational Core Values

INTEGRITY — We are open, honest, and transparent in our communications and actions and demonstrate ethical practices in executing our mission.

PEOPLE — We recognize people are our most important resource and respect and value our collective experience, skills, and diversity. We embrace new challenges, seek out opportunities to learn and develop, and continuously improve our skills and knowledge.

SAFETY — We protect the health of the public and our workers and promote safe work practices at all our offices and sites.

BUSINESS EXCELLENCE — We are fiscally responsible and actively pursue continuous improvement through the implementation of leading business practices.

COMMUNICATION — We share information in a clear and concise manner throughout all levels of the organization and leverage all communication platforms.

LEADERSHIP AND TEAMWORK — We value leadership and teamwork and encourage active participation in program decision making. We are responsible and accountable for our actions and decisions.

STAKEHOLDER FOCUS — We openly communicate with all our stakeholders in a timely manner and actively seek opportunities to improve our services.

ENVIRONMENTAL STEWARDSHIP — We consult with our communities to develop and implement sustainable solutions that comply with environmental laws, regulations, and agreements; support environmental justice; and demonstrate respect for the environment. We are environmentally and socially responsible and give back to the local communities.



Mission, Vision, and Operating Principles

Mission

Fulfill the Department of Energy's post-closure responsibilities and ensure the future protection of human health and the environment.

Vision

Our vision is to ensure:

- The communities near our legacy cleanup sites, the environment, and our legacy workforce are protected and well served.
- People and the environment are protected by consistent and effective long-term surveillance and maintenance.
- Records and information are preserved and readily accessible to the public.
- Stakeholders, tribal partners, and state and local governments trust us because we are open, honest, and have collaborative working relationships with them.
- Benefits are delivered to the Department's former contractor workforce in a reliable and timely manner.
- Decisions are made based on meaningful engagement with interested and affected stakeholders.

Operating Principles

Seven principles guide the implementation of our strategic plan:

- 1. We operate safely with the protection of human health and the environment as our top priority.
- 2. We are serious about our responsibility, as a federal trustee, to safeguard land and resources.
- 3. We recognize that legacy activities are local and tailor site-specific solutions to short- and long-term issues facing our sites and the nearby communities.
- 4. Stakeholder involvement is integral to our operations, and we understand our success requires engaging with our communities and tribal partners.
- 5. We operate in an open, honest, and transparent manner.
- 6. We are fiscally responsible in managing taxpayer money.
- We ensure continuity of operations, including relocation of personnel and resources and the performance of critical functions in the event of emergencies.

Summary of Goals and Objectives

Goal 1: Protect human health and the environment.

- Comply with environmental laws and regulations related to radioactive and hazardous waste and materials.
- Improve cost effectiveness while reducing post-closure-related health risks.
- Improve the long-term sustainability of environmental remedies.
- Address the environmental legacy of defense-related uranium mining and milling sites.
- Transition new sites to LM in a safe, timely, and cost-effective manner.





Goal 2: Preserve, protect, and share records and information.

- Protect and maintain legacy records and information.
- Make technology solutions more efficient, accessible, and secure to the LM stakeholder and user communities.
- · Manage environmental and spatial data.

Goal 3: Safeguard former contractor workers' retirement benefits.

- Ensure prudent funding of former contractor workers' retirement benefits.
- Shelter former contractor workers' retirement benefits from risks.





Goal 4: Sustainably manage and optimize the use of land and assets.

- Enhance sustainable environmental performance for facilities and personal property and address severe weather events.
- Optimize the use of federal lands and properties.
- Transfer excess government real and personal property.

Goal 5: Sustain management excellence.

- Sustain a talented, diverse, inclusive, and performance-driven workforce.
- Develop and maintain high standards for planning, budgeting, acquisition, and program and project management.
- Improve the quality, efficiency, and effectiveness of site management and business support actions.
- Ensure protection of workers, the public, and the environment.





Goal 6: Engage the public, governments, and interested parties.

- Engage the public in our program, project, and site activities.
- Work effectively with local, state, and federal partners; nonprofit organizations; international organizations; and other countries.
- Consult and collaborate with tribal partners.
- Support DOE's historic preservation program.
- Implement Environmental Justice Executive Orders and federal actions to address environmental justice.

Resource Strategies

LM's site management responsibilities are broad and diverse — we are currently protecting human health and the environment at over 100 sites in more than 30 states and territories. We manage commitments to more than 7,000 retired contractor workers, more than 110,000 cubic feet of physical records, 31 terabytes of electronic data and information, and 57,000 acres of land. While site transitions are occasionally delayed due to external factors, we expect an additional 30 sites to be transferred to LM by 2035. As a result, we need to be prepared and positioned by strategically acquiring and allocating our resources to achieve our mission and meet our goals and objectives. This includes early and frequent engagement and communication with organizations transferring sites, as well as associated regulatory agencies and stakeholders, to better understand site remedies and operating costs and tailor our resource requirements to the complexity of sites being transferred. Our resource strategy is best described in three broad areas: people and organizations, technology and processes, and funding and acquisition.

People and Organizations

The LM organization currently comprises 80 authorized federal employees and approximately 500 contractor personnel and anticipates a growth in staff to handle incoming sites. The majority of our staff is located at main offices in Grand Junction and Westminster, Colorado; Morgantown, West Virginia; and the District of Columbia and at several smaller offices in Monticello, Utah; Pinellas, Florida; Hamilton, Ohio; St. Charles, Missouri; Shiprock, New Mexico; and Window Rock and Tuba City, Arizona. Our organization of professionals is connected through state-of-the-art technology.

The LM organization is composed of personnel with a multidisciplinary set of skills and abilities. Our geologists, hydrologists, engineers, and physical scientists ensure long-term protection of the environment. Our certified realty officers and property specialists manage and dispose of federal property. We also have information technology (IT) specialists and records professionals to capture, safeguard, and share data and information. Our historians and public-participation specialists lead our communication and engagement strategies to effectively share information with stakeholders; tribal, local, and state

governments; the international community; and other partners. And lastly, our human resource and administrative staff provide cost-effective support to management and site personnel and associated workflow needs.

LM augments federal staff with a prime contractor to ensure consistency and accountability for protecting human health and the environment, preserving records, managing land and assets, sustaining management excellence, and engaging stakeholders.

In addition, LM also uses existing DOE management and operating contractors to manage and provide post-retirement benefits to retired contractor workers. This approach reduces cost, utilizes a knowledgeable existing workforce, and ensures reliable and accurate payment of benefits.

Management of our sites requires close cooperation with local, state, and federal government agencies and tribal partners. We also have agreements with private landowners, commercial operators, public utilities, non-profit organizations, and DOE national laboratories. These relationships and arrangements provide LM with resources necessary to conduct our mission and meet our goals in a timely and cost-effective manner.



Technology and Processes

LM is proactive in studying and applying new costeffective technologies that improve worker and public safety and enhance protection of the environment. We continually evaluate emerging engineering and scientific advancements and expect to further apply remote sensing, telemetry, and uncrewed aviationbased sensors with instruments to assist with site monitoring efforts.

LM remotely monitors instrumentation and operates equipment systems that allow a single operator to simultaneously monitor the performance of environmental remedies at multiple sites. This technology has significantly expanded our monitoring capabilities while allowing staff to focus on other mission-critical functions.

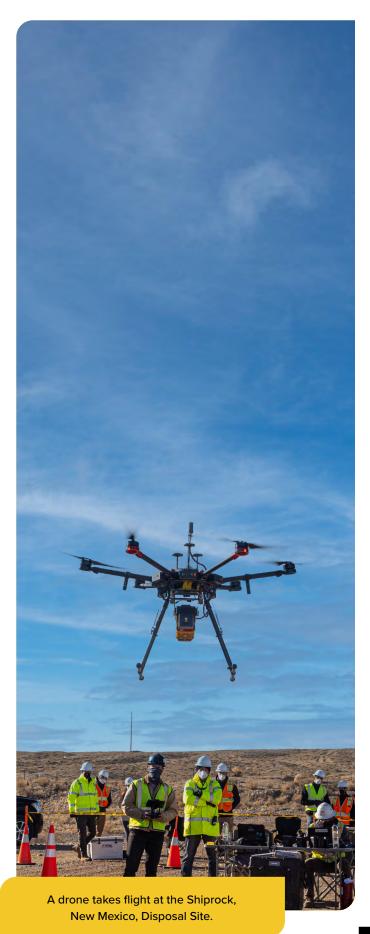
Environmental remedies are conservative in nature and often include multiple layers of protection. Cleanup organizations have spent billions of dollars to perform remediation and establish long-term sustainable remedies. LM protects those investments through active maintenance, as well as administrative institutional controls (ICs), as part of a "defense in depth" strategy for our sites.

Funding and Acquisition

LM works closely with DOE management, the Office of Management and Budget (OMB), and Congress to communicate our goals and objectives and associated resource requirements. Funding for LM's mission is requested by the Department and appropriated and authorized by Congress.

In addition, some LM operations also generate revenue for the federal government. Money is provided to the U.S. Department of the Treasury through royalties from the Uranium Leasing Program (ULP).

Lastly, LM works closely and collaboratively with land management agencies, adjacent landowners, and other government agencies to cost-effectively manage land and related infrastructure. This includes allocating resources for construction and maintenance of roads, landfills, disposal cells, trails, signs, fences, weed and animal control, and other common aspects of asset management.



Goal 1: Protect human health and the environment

Situation Analysis

LM protects human health and the environment by conducting LTS&M activities at over 100 sites to ensure that environmental remedies put in place during site cleanup are effectively maintained over time. Our site inventory will expand as other former defense nuclear sites are transferred to LM upon the completion of remediation and regulatory closure. Sites can be transferred to LM when all transition requirements are satisfied. This includes ensuring that treatment or management strategies for contaminated soil and groundwater are in place. Consequently, groundwater treatment continues to be a challenging and long-standing effort at some of our sites.

As organizations complete cleanup, the largest and most severely contaminated challenges remain and represent some of the most complex sites for LM to manage. Consequently, we will need more site managers and increasing support from functional areas including environmental compliance and real estate to ensure the proper site management and oversight. In addition, we are inheriting aging facilities and infrastructure, and existing facilities are also aging faster than anticipated. As such, we may have to request line-item repairs estimated in the \$20-\$25 million range. In other instances, a repair to a remedy could be over \$50 million, in which case we will need to work with appropriators and stakeholders through sustainment, modernization, and maintenance programs to address deficiencies. Specific situations may require LM to conduct reach-back capability to DOE's Office of Environmental Management (EM) to address remedy solutions.

Further, LM has received some sites that contain contaminated soils that were inaccessible during remediation. In the Formally Utilized Sites Remedial Action Program (FUSRAP), for instance, the U.S. Army Corps of Engineers (USACE) transferred sites to LM once all accessible contamination was removed and deed notices for inaccessible soil under remaining infrastructure such as roadways, buildings, and utility corridors were in place. LM will work with USACE to characterize and dispose of any inaccessible materials that become accessible due to construction, redevelopment, or otherwise.

LM maintains compliance with regulations designed to prevent the exposure of the public to radioactive and hazardous materials at these sites. LM is also addressing physical hazards at uranium mines, many of them abandoned, that provided uranium ore to the U.S. Atomic Energy Commission (AEC), a predecessor agency to DOE, between 1947 and 1970.

LM sites fall under a variety of regulatory and/or functional categories:

- Resource Conservation and Recovery Act (RCRA).
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- Uranium Mill Tailings Radiation Control Act (UMTRCA).



- Formerly Utilized Sites Remedial Action Program (FUSRAP).
- Defense Decontamination and Decommissioning (D&D) program.
- Manhattan Engineer District (MED) / U.S. Atomic Energy Commission (AEC).
- Nevada Offsites, (including Plowshare, Vela Uniform and weapons-related programs).
- Nuclear Waste Policy Act (NWPA, 1984) Section 151.
- State Water Quality Standards.

A map of current and future LM sites is located on page 38-39. Maps of current and future LM sites are summarized on pages in the LM Site Management guide available via the internet at www.energy.gov/sites/default/files/2023-12/LM%20SMG%20 November%202023%20Update%2030.pdf. Site-specific information is available via the internet at www.energy.gov/lm/sites/lm-sites

Long-Term Surveillance and Maintenance

LM conducts LTS&M activities including the isolation of radioactive and hazardous materials (often in engineered disposal cells), management and remediation of contaminated groundwater, and maintenance of ICs ranging from signs to legal instruments such as deed restrictions. Even at LM sites where no contamination remains and there are no future-use restrictions, LM maintains applicable federal records and site information and addresses stakeholder inquiries as part of maintaining institutional knowledge.

LTS&M of LM sites includes field activities such as annual site inspections, environmental monitoring, implementation of environmental remediation strategies (particularly for groundwater), and ensuring ICs remain in place and are being enforced. ICs do not take the place of site remediation and are not intended as a substitute for such things as groundwater cleanup, but rather are protective measures needed while cleanup progresses. Some engineering controls will remain indefinitely, such as barriers to the mill tailings at UMTRCA sites and lowlevel radioactive waste that was left in place at sites closed under RCRA and CERCLA. ICs inform the public of the potential danger from residual contamination and prevent uses of sites (e.g., drilling of water-supply wells where groundwater contamination is present) that could cause inadvertent public exposure. ICs are often layered to provide additional protection and durability over time.

After years of conducting LTS&M, our understanding of the challenges posed by protecting human health and the environment at LM sites has changed. Many sites require only records retention and limited inspections. However, at some UMTRCA sites, water discharged during mill operations resulted in contaminated groundwater that has proved to be more difficult to remediate than originally anticipated. These sites require more extensive characterization, monitoring, implementation of new treatment technologies, modification of groundwater compliance action plans (GCAPs), or even recommendations to regulatory agencies to adopt alternatives resulting from modern modeling that suggests groundwater plumes will last more than 100 years.

LM is addressing challenges associated with vapor intrusions and emerging contaminants and chemicals of concern such as per- and polyfluoroalkyl substances (PFAS) and vapor-forming chemicals as regulator inquiries and requirements develop. Concerns exist regarding the impact on human or ecological health from these contaminants, but they are not currently (or have been only recently) regulated and, therefore, not commonly

monitored. As new contaminants of concern are identified, LM will work with regulatory agencies to develop an approach and planned actions to assess and manage the risks at our sites.

Due to technical or economic limitations, many sites will never be released for unrestricted use. However, these sites must meet the regulatory standards and agreements defined by LTS&M plans and applicable regulatory documents. For example, LM will be responsible for several small, privately owned FUSRAP sites and adjacent properties that will require close monitoring because of their residual contamination and proximity to commercial and residential areas. We recognize that, as environmental remediation efforts continue and sites are transitioned to LM for long-term care more frequently, our LTS&M responsibilities will become increasingly complex and varied and require continual improvements to continue to protect human health and the environment.

Severe weather events, long-term climate change effects, and natural phenomena (e.g., earthquakes) pose additional challenges. Changes to disposal cells and landfills result from soil formation and vegetation establishment and succession, which could affect remedy effectiveness. For LM sites in arid and semiarid regions, some of these changes have occurred faster than originally anticipated and could significantly affect the environmental liabilities at the sites. To gain insight into how we might adapt LTS&M strategies, LM is studying the potential impacts of these changes, routinely participating in knowledge and experience exchanges, and attending training and conferences focused on building and improving sustainability and resilience. Additionally, we have determined where LM sites are most vulnerable. methodologies to mitigate those vulnerabilities and enhance resiliency, and how to incorporate relevant event factors into program decisions. We will continue to integrate these sustainability and resilience considerations into operational activities.

LM bolstered its disaster response capability to address repair work beyond LM's core mission, capabilities and capacities, and resources, such as remedy failure, by establishing multiple interagency and intra-agency agreements. LM collaborated with DOE's Office of Environmental Management, which executes the world's largest environmental remediation programs, to arrange for support should the worst-case scenario of remedy failure materialize. Also, since sites cannot be returned to former licensees for remedy failure or additional cleanup, LM established an Interagency Agreement with the USACE Rapid Response Technical Center of Expertise. Through this instrument, LM now has a team ready to deploy within 72 hours to stabilize and repair environmental remedies at LM's portfolio of sites in situations that are beyond our ability to address.

Site Transition

As previously mentioned, we anticipate additional sites will be transferred to LM. Our work on these sites begins well before the formal transfer date. We may begin site transition activities three to five years before LM takes full responsibility, depending on the complexity of the site. Significant site transition activities include:

- Engaging with site stakeholders and regulatory agencies to ensure an informed and efficient transfer of all long-term stewardship responsibilities.
- Preparing long-term stewardship plans and receiving feedback from stakeholders and approval from site regulators.
- Capturing environmental cleanup data, institutional information, geospatial data, and other legacy records associated with cleanup, including how remediation decisions were made.
- Inventorying all real property assets necessary for long-term care.
- Asserting that all administrative ICs are in place.
- Developing relationships with site stakeholders, regulators, and tribal partners to understand their concerns.
- Ensuring stakeholders understand LM's role in making certain the site remains protective of human health and the environment.
- Conducting due-diligence reviews of remediation conducted at the site, including inspecting features such as waste disposal cells or groundwater treatment systems to ensure that they are functioning properly.

Uranium/Thorium Reimbursement

Title X of the Energy Policy Act of 1992 directed DOE to reimburse private licensees of one thorium and 13 uraniumprocessing sites for a portion of their remedial action costs attributable to the sale of source material to the federal government, primarily during the Cold War era. In May 2011, LM and EM entered into a Memorandum of Agreement assigning LM the responsibility to conduct technical and financial audits and determine the amount eligible for reimbursement under Title X. After consultation with EM, who oversees funding requests and issues payments for the Title X Program, reimbursements are then provided to the Title X licensees. The active management of the Title X thorium and uranium reimbursement program by LM and EM accelerates cleanup progress and reduces environmental liabilities as licensees actively clean up the legacy uranium- or thorium-processing sites across the United States.

Calibration Facilities

LM supports the development, standardization, and maintenance of calibration facilities for environmental radiation sensors. Calibration facilities are national assets and we continue to ensure the facilities and associated capabilities are functionally available to support key environmental strategic initiatives. The international (e.g., International Atomic Energy Agency, or IAEA) and national (e.g., U.S. Environmental Protection Agency, or EPA, and National Nuclear Security Administration, or NNSA) communities use the radiation standards in these facilities to calibrate their instruments. LM manages the calibration facilities located at our Grand Junction Site and the Grand Junction Regional Airport in Colorado; Grants, New Mexico; Casper, Wyoming; and George West, Texas. An additional calibration facility located at DOE's Hanford Site near Richland, Washington, is managed by DOE's Office of Environmental Management.

Defense-Related Uranium Mines

LM leads a multiagency effort to address the environmental legacy of defense-related uranium mines in the United States. In 2014, after consulting with other federal agencies, affected states and tribal entities, and the interested public, LM submitted the *Defense-Related Uranium Mines (DRUM) Report to Congress*. An inventory database was developed for the DRUM report and findings confirmed there were 4,225 known ore-purchase records in which uranium ore was provided to AEC between 1947 and 1970 for atomic energy defense activities. Since the issuance of the Report to Congress, further reconciliation of uranium mining records for defense activities from 1947 to 1970 resulted in reducing the actual number of mines from 4,225 to 3,472.

Some reclamation and remediation of uranium mines has occurred by state, federal, and tribal partners under different regulatory frameworks. However, there is an ongoing effort to coordinate government goals and to more effectively allocate resources to address this national problem.

To better address the environmental legacy, LM has partnered with EPA, the U.S. Bureau of Land Management (BLM), the U.S. Forest Service (USFS), the National Park Service (NPS), the U.S. Geological Survey (USGS), and other federal, state, and tribal partners to improve the content and quality of mine data in the inventory database.

The DRUM program partnership will continue verifying and validating the condition of an estimated 2,300 mines on public land through the end of 2024. In 2022, the DRUM program commenced inventorying over 200 mines on tribal lands, with plans to complete this effort by the end

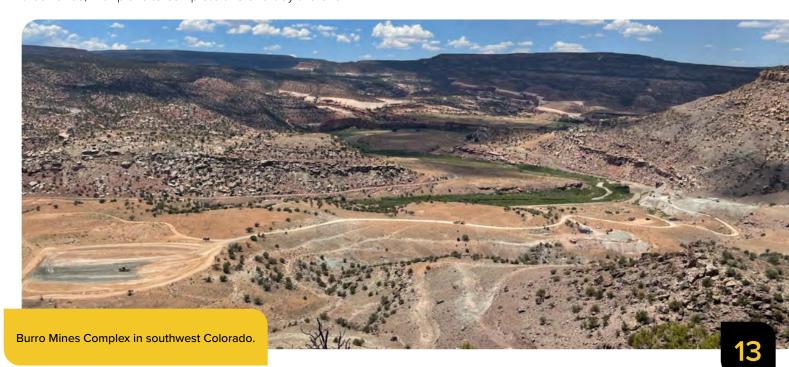
of FY 2027. In 2025, we will initiate verifying and validating the condition of an estimated 600 mines on private lands, with plans to finish by the end of FY 2028.

Based on the program's experience through June 2023, physical hazards were present at 65% of the mines inventoried and were by far the most common risk type present. By contrast, less than 10% of the abandoned mines have been identified as requiring further analysis via the CERCLA process. This trend is expected to continue through program completion in 2030 and will inform the program's efforts and resource allocation throughout the program.

LM began physical hazard reclamation, or safeguarding of physical hazards, in 2020 at mines that were identified during the field inventory process as having the highest risk for physical hazards. Through 2023, nearly 880 hazardous mine features have been safeguarded, with another 2,200 hazardous features anticipated. LM plans to continue safeguarding activities to the maximum extent possible, focusing on the most significant hazards, through 2030.

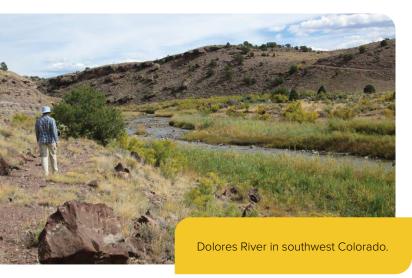
We are providing a significant national service by performing verification and validation at DRUM sites by addressing existing knowledge data gaps, maintaining and sharing data and information with federal, state, and tribal partners and private land managers, protecting the public by mitigating physical hazards, and reducing the government's environmental liabilities.

This undertaking helps governments address highpriority mines through a coordinated, collaborative, and cost-effective approach to DRUM reconnaissance and reclamation efforts



Uranium Leasing Program

In addition to working on abandoned uranium mines, LM manages 31 lease tracts (29 of them active) within the Uravan Mineral Belt in southwestern Colorado where private companies can mine for uranium and vanadium ores. The ULP tracts (approximately 25,000 acres in total area) are leased on a competitive bid basis to mining companies who operate under terms of agreement that include the payment of annual and production royalties to the U.S. Treasury. A National Environmental Policy Act (NEPA) programmatic environmental impact statement for the ULP was completed in 2014. In accordance with the NEPA Record of Decision, LM will establish leases for an additional 10-year period to allow for exploration, mine development and operations, and reclamation of uranium mines.



ULP management is an opportunity for industry to demonstrate responsible life-cycle uranium mining. The leases require actions to address potential environmental impacts at all stages of the mining cycle, including reclamation of the mines when production ends. In recent years, the worldwide uranium market has been depressed, causing the ULP lease tracts to remain essentially in caretaker status. Should uranium market prices reach levels that make active mining profitable and uranium mining resumes, the ULP would become a growth area, requiring additional resources to provide environmental compliance and oversight of the programmatic activities (e.g., validate ore production records for purposes of calculating, recording, and processing royalties).

Additionally, the ULP is an opportunity for the Department to support U.S. mining companies in their efforts to provide a domestic supply of uranium. The supply of uranium is vital to U.S. national and energy

security, since the U.S. is the world's largest consumer of uranium. The ULP helps lessen concerns about reliance on foreign uranium reserves. This domestic industry provides the key ingredient to power nearly 100 commercial nuclear reactors in the United States. Commercial nuclear energy contributes roughly 18% of the electricity for the U.S. electric grid, which is essential to the critical industrial infrastructure upon which the nation's economy, security, and health rely.

Applied Studies and Technology

Given the long half-lives of radionuclides, LM sites will require LTS&M for hundreds or even thousands of years. Incorporating improvements in scientific understanding and technology applications into site management and remediation strategies improves the effectiveness of site cleanup and reduces long-term costs. We seek to remain informed of emerging engineering and scientific advancements through LM-sponsored studies and promote data sharing and scientific achievements by collaborating with other federal agencies, the environmental community, universities, national laboratories, and the international scientific community. Our efforts include improvements to the long-term sustainability and resilience of site remedies.

We will continue to leverage our Applied Studies and Technology program to address the challenges at LM sites. Our focus is on actionable studies and technology targeted to address technical challenges (e.g., groundwater treatment) at current sites. We will continue to leverage the National Laboratory Network and expertise of applied engineering and science and apply the best technology to complex challenges to reduce risk and maximize the return on our investments.

The overriding goal is to have mutually beneficial exchanges that lead to the incorporation of advances in science and technology and improve LM capabilities in long-term stewardship. Individual countries and international organizations are recognizing the importance of long-term stewardship as they address their own environmental issues from Cold War activities. As a result, LM will engage in multilateral (e.g., IAEA) and bilateral (e.g., Canada's Nuclear Safety Commission) international activities.

Legacy Management National Laboratory Network

LM is expanding and maximizing access to environmental management technical expertise and assistance through collaboration with the Savannah River National Laboratory (SRNL) and other DOE laboratories in the development and deployment of environmental remediation and monitoring technologies. This includes, but is not limited to, recommendations regarding the evaluation and optimization of long-term performance of disposal cells, groundwater treatment systems, and LTS&M systems and strategies that are actionable and deployable. This commitment was acknowledged with a Memorandum of Understanding signed on March 1, 2018, between DOE's SRNL, EM, and LM. We have developed a National Laboratory Network for collaborative efforts to support LM's mission needs.

Similarly, LM and USACE collaborated and executed an interagency agreement so they may access the network of National Laboratory Network of National Laboratories for Environmental Management and Stewardship for radiological specialized services on over 20 FUSRAP sites undergoing active remediation. Access to a DOE cadre of highly specialized expertise allows USACE to expand access to technical expertise and address unique radiological site conditions in a timely manner.

Our strategic use of the National Laboratory Network enables us to stay informed of the advancements in science and emerging technologies to address the most complex LM site challenges and enhance our stewardship activities.



Objectives and Strategies

Comply with environmental laws and regulations related to radioactive and hazardous waste and materials. STRATEGIES:

- Work closely with federal, state, local, and tribal partners to set clear expectations and monitor results.
- Prepare, implement, evaluate, and update LTS&M plans to protect human health and the environment.
- Monitor and respond to proposed changes in environmental laws and regulations.
- Establish, maintain, and monitor policies to ensure their integrity and efficacy.
- Make the results of LTS&M site inspections and monitoring readily available to regulators and stakeholders.

2. Improve cost effectiveness while reducing post-closure-related health risks.

STRATEGIES:

- Use the relative ranking of human health and environmental risks of sites to prioritize programmatic actions.
- Improve efficiencies through development and implementation of cost-effective plans.
- Develop risk-based, end-state approaches for GCAPs that meet applicable regulations while reducing risk at a reasonable cost to the taxpayer.

3. Improve the long-term sustainability of environmental remedies.

STRATEGIES:

- Record and analyze data on long-term performance of radioactive and hazardous material storage sites and environmental treatment systems.
- Collaborate with organizations that conduct scientific research and development in support of LTS&M objectives.
- Explore and advance innovative technical approaches (e.g., expanding the use of uncrewed aerial vehicles to enhance data-gathering efforts) that improve the quality of LTS&M and inform remediation strategies.
- Develop changes to LTS&M plans that maintain compliance objectives and reduce costs.
- Assess the effects of severe weather events, longterm climate change effects, and natural phenomena on environmental remedies. Incorporate sustainable and resilient practices, mitigations, and preparedness plans to address impacts.
- Participate in mutually beneficial IAEA efforts and other international initiatives to identify leading practices and develop recommendations for the management of post-closure care of uranium mining and milling sites and other legacy nuclear sites around the world.
- Host visits by regulators and legacy site managers from the U.S. and other countries.



4. Address the environmental legacy of defense-related uranium mining and milling sites.

STRATEGIES:

- Complete DRUM program campaigns on public, tribal, and private lands by the end of FY 2030.
- Conduct site-specific reconnaissance at defenserelated uranium mines for the purposes of data validation and verification, risk screening, and reclamation and remediation status.
- Exchange mine data and information with other federal, state, and tribal partners and help address mines presenting the greatest risks.
- Facilitate timely and accurate responses to litigation requests by improving access to abandoned uranium mine documents and data.
- Collaborate with other governments, mining organizations, and industries to improve our technical understanding of mine reclamation and remediation options for conventional and in situ uranium mining.
- Manage mining and exploration on ULP lease tracts as an example of responsible life-cycle mining of uranium and vanadium ores.
- Fulfill commitments for engagement through implementation of programmatic agreements for the ULP and other programs.

5. Transition new sites to LM in a safe, timely, and cost-effective manner. STRATEGIES:

- Understand all environmental liabilities associated with the site.
- Improve the transition program through the early identification of site transition activities.
- Develop tailored LTS&M plans based on the risk and complexity of the site to be transitioned.
- Obtain site records, environmental data, and institutional information, including how remediation decisions were determined.
- Ensure all remedies and institutional controls are in place and operational.
- Ensure all real property assets required for LTS&M are identified and transferred.
- Establish relationships with site stakeholders, regulators, and tribal partners to understand their concerns and to ensure they understand LM's role in making certain the site remains protective of human health and the environment.
- Conduct due-diligence reviews of site remediation.



Goal 2: Preserve, protect, and share records and information

Situation Analysis

Strong, disciplined records and information management is necessary for transparency and accountability and is an integral and fundamental component of the LM mission. We continue to modernize our records and information management policies and practices to become a more efficient and digital workplace. Our work meets the

Department's initiative to develop a framework for modern records and information management practices and supports the Department's goal to promote openness and reduce long-term records and information costs by transitioning to a digital government.

Key LM records and information management initiatives include a continued emphasis on supporting a hybrid workplace in accordance with Departmental guidelines including disciplined operations, maintaining secure networks by implementing emerging cybersecurity practices, and enhancing data governance and accessibility. These records and information initiatives provide for the safe, secure, and cost-effective implementation of the LM mission. The early transfer of electronic information and records from cleanup organizations to LM is critical to timely and successful site transition and implementation of a cost-effective digital environment.

Records and Information Management

The Department manages records consistent with legal and regulatory requirements and complies with the Office of Management and Budget, National Archives and Records Administration (NARA) and DOE guidance. As sites are identified for mission closure, remediated, and transferred to LM, the associated records and information are identified and transferred early in the site transition process and preserved in accordance with NARA-approved retention policies. LM's ability to fulfill records preservation and information management responsibilities is enhanced by our NARA-certified LM Business Center (LMBC) records storage facility — a state-of-the-art, climate-controlled storage area designed to maximize LM's preservation capabilities. The facility currently maintains over 85,000 cubic feet of physical records and 31 terabytes of electronic records. LM records and information management leading practices continue to lower the long-term cost of records storage and improve efficiencies and responsiveness to stakeholders seeking information about America's Cold War-era nuclear sites.

LM's level of requests for records has remained steady, averaging approximately 2,000 requests per year. The majority of requests support the U.S. Department of Labor efforts to process claims associated with the Energy Employees Occupational Illness Compensation Program Act. The volume of documents per request under the Freedom of Information Act, as well as the Privacy Act of 1974, requires a significant level of effort to meet statutory timeliness requirements. With the Department's emphasis on open and transparent government using electronic record keeping, LM uses a knowledge-management approach to oversee all LM's information assets the same way it manages federal records.





Information Technology Management

Improved use of IT continues to be a key factor in enhancing the productivity of the LM workforce. The IT infrastructure continues to support a cost-effective, mobile, flexible work environment while balancing security, risk, and operational capability. This includes deploying operational support technology that supports and streamlines remote operational actions, environmental treatment solutions, and interoperability between Headquarters and field locations. Both information sharing (mission enablement) and information safeguarding (mission assurance) continue to increase and require evaluation and prioritization. To accomplish this focus, LM has implemented a risk-based decision-making IT governance process, which improves effectiveness and operational efficiency and aligns LM with the Federal Information Technology Acquisition Reform Act. The risk-based decision-making process ensures risks are identified, understood, and mitigated as necessary.

Securing LM systems and networks, including stronger enterprise identity and access controls, is a continuous effort that demands constant awareness from all LM staff. We continue to move to secure cloud services, zero-trust architecture, and deployment of multifactor authentication and encryption to mitigate risks and enhance security. Our robust internal system security testing program enables the safe adoption of new technology to improve operational efficiency. These LM system enhancements improve our ability to detect malicious cyber activity on our networks by enabling a government-wide endpoint detection and response system and improved information sharing. Improved IT management and security also supports records requests and the preservation of historical records and information for legacy sites such as Yucca Mountain and other inactive sites.

Environmental Spatial Data Management

LM continues to leverage data as a strategic asset and develop and implement an enterprise data governance strategy consistent with OMB operational principles and best practices. Data governance is a LM focus to exercise planning, monitoring, and control over the management of data assets. Our governance processes developed for environmental and spatial data have been refined to address standards identified in the Foundations for Evidence-Based Policymaking Act of 2018 and the Geospatial Data Act of 2018 and inform the comprehensive LM data governance strategy.

LM creates, maintains, uses, preserves, and disposes of environmental and geospatial data using modern tools. These technologies provide improved data quality, accessibility, and governance. We use the Geospatial Environmental Mapping System (GEMS), a publicly available system with a modern platform, to provide regulatory agencies and interested parties access to our LTS&M data. We are also building upon the implementation of a secure system to enhance and improve data loading, processing, and reporting; visualize historical and future data; and provide for the ability to act on data near real time. LM environmental and geospatial tools increase our accessibility to accurate, real-time data to support key decisions and environmental administrative records.

LM environmental and geospatial data systems provide for better integration between systems, more efficient and effective products, and easier data consumption across the organization. Our approach includes managing data as a strategic asset; making data discoverable, accessible, and usable; creating and maintaining standards; improving coordination among stakeholders; prioritizing data governance; and improving public access.

Objectives and Strategies

1. Protect and maintain legacy records and information.

STRATEGIES:

- Proactively obtain records from transitioning sites and throughout the site's life cycle.
- Actively populate and maintain metadata consistent with federal guidelines.
- Implement leading practices in knowledge and information management, including new tools and techniques to improve the efficiency and effectiveness of LM's records and information management.
- Evaluate fully automated IT system surveillance and apply appropriate security measures to mitigate risks and strengthen LM's cybersecurity posture.
- Use the Federal Strategic Sourcing Initiative to leverage volume-pricing discounts for IT solutions.
- Enhance LM transparency by actively improving LM's presence on the data.gov website.



Make technology solutions more efficient, accessible, and secure to the LM stakeholder and user communities.

STRATEGIES:

- Improve public search and retrieval capability through website improvements.
- Empower users to interact with, explore, and share their environmental and spatial data through intuitive and engaging tools.
- Continue to evaluate systems hosted in the LM environment and reduce technical debt.
- Improve solutions to address site management and operation needs.
- Digitize frequently requested portions of LM's physical holdings when proven to be cost-effective.
- Evaluate new projects for return on investment to maximize the benefits
- Enhance the cyber capabilities to secure LM data and systems.

3. Manage environmental and spatial data.

STRATEGIES:

- Maintain GEMS, which provides the public with access to LM environmental and geospatial data associated with LTS&M.
- Improve the efficiency and integration of environmental databases.
- Create a data catalogue to improve data visibility and accessibility.
- Improve field data collection tools to enhance data governance.

Goal 3: Safeguard former contractor workers' retirement benefits

Situation Analysis

LM funds post-retirement medical and life insurance benefits for more than 7,000 former contractor workers and their qualifying spouses. The Department's oversight of retirement benefits of former contractor workers at closure sites is unique in the federal government. DOE continues to fund the benefit programs after contract closeout, while maintaining and improving the quality of services to post-closure retirement plan participants. DOE manages the risks associated with medical cost inflation, medical plan usage rates, and changes in legislation that affect benefits administration after the contract work is complete.

A significant amount of LM's budget will be used to fund contractor post-retirement benefits, with medical insurance accounting for the single largest outlay. This creates a significant funding risk for LM because the cost of health care has been increasing faster than inflation. In addition, a growing federal deficit has contributed to increased pressure to reduce or maintain the current level of federal spending. Three contractors have mitigated this funding risk by proposing and receiving Departmental approval to implement health reimbursement arrangements for retirees. This provides retirees with a fixed amount to be used to purchase Medicare supplemental insurance on the open market. Several other DOE contractors with open plans have looked to LM's conservative approach as a model.

LM will continue to safeguard retirement benefits and control costs by working closely with an intra-agency working group, contractor staff, and independent actuarial firms to understand and adopt emerging cost-effective practices.



Objectives and Strategies

1. Ensure prudent funding of former contractor workers' retirement benefits.

STRATEGIES:

- Use multiyear post-retirement benefit projections by federal actuaries and independent consultants to review annual contractor cost estimates.
- Use a fiscally conservative approach to estimate and budget for health care and life insurance costs.

2. Shelter former contractor workers' retirement benefits from risks. STRATEGIES:

- Continue to review and support, as appropriate, contractor efforts to mitigate rising retiree health care costs through health reimbursement arrangements.
- Evaluate the potential impacts of health care legislation and out-year funding restrictions on the ability to maintain contractor health care plans at current levels



Goal 4: Sustainably manage and optimize the use of land and assets

Situation Analysis

LM is responsible for managing a broad and diverse portfolio of land and assets. Several LM sites have unique and irreplaceable natural, historic, and cultural heritage resources that increase the complexity of our mission. Due to LM's unique long-term mission that extends generations, we must recognize, understand, and implement sustainable management practices for the successful maintenance of environmental remedies in place and for the future management of lands in a manner that protects human health and the environment.

We understand our mission is being performed in a continually changing climate. We continue to identify and adopt emerging scientific information and technical innovation to address its potential impacts. Protecting LM assets from potential impacts includes assessing our vulnerabilities, taking action to adapt to the changing environment, and making resilience a cornerstone of our operations to ensure we have climate resilient sites.

We also support the beneficial reuse of land and assets, so that former sites can potentially become community assets. LM strives to utilize legacy sites and property for the most beneficial use. Where possible, since some sites or portions thereof will be permanently inaccessible in accordance with the selected remedy, we make lands and facilities available for government, public, and private use consistent with the LM tenets of sustainability and good land management practices. Beneficial reuse optimizes the use of lands and assets and fosters good land stewardship by protecting remedies. Beneficial reuse can also lead to environmental, social, and economic benefits.

Sustainable Long-Term Management

LM implements sustainable management practices at sites and facilities in accordance with federal, state, and tribal government regulations. We incorporate climate adaptation and resilience principles and goals in our planning, operations, and budget processes, including identifying opportunities to realign resources and needs for new resources where appropriate. We achieve and demonstrate environmental excellence by assessing and controlling the impact of our activities and facilities on public health, employee safety, and the environment under our Environmental Management System. LM strives to be mindful of the long-term nature of our mission and plans for efficiency, optimized performance, and reduced costs and waste associated with energy use, renewable energy, water conservation, and our fleet and aviation management programs. We are cognizant of potential impacts our program may have on natural resources, but also how potential severe weather events may impact the effectiveness of the remedies at LM sites for protecting human health and the environment. LM strongly considers the environment when managing our occupied facilities across the country. Whether we lease or own assets, we plan to promote High Performance and Sustainable Building (HPSB) guiding principles and strive to meet Leadership in Energy and Environmental Design (LEED) standards for construction.

We continue to integrate climate readiness into the management of our real property. This includes incorporating climate change adaptation and mitigation into the management of our facilities and infrastructure (e.g., reduce facility-related energy and water usage, employ resilience-enhancing land-use planning and management principles, and use sustainable and resilient remediation options). These efforts not only improve LM sites' climate readiness by reducing reliance on energy and water resources, but also reduce the effects of climate change by conserving resources and reducing greenhouse gas emissions.



Elk herd at Rocky Flats Site, Colorado.

We leverage unique modeling, climate science expertise, policy, technology, and engineering capabilities to continuously improve our adaptation and resilience strategies. LM, in collaboration with its National Laboratory Network, continues to perform comprehensive analyses of projected changes in climate parameters that could impact remedies at LM sites. More detailed analyses include high-risk sites where climate change is expected to be greatest and sites with a higher potential for significant impacts (e.g., regions where annual precipitation is estimated to increase or decrease significantly). Results, including potential mitigation and adaptation measures, will be incorporated into LTS&M activities to make certain that the remedies are resilient and continue to protect public health and the environment.

Beneficial Reuse

LM supports proactively managing real property assets over the long term to use lands and facilities for federal, public, and private purposes while remaining consistent with the tenets of sustainability and good land-management practices. Beneficial reuse for LM refers to a productive use of land or assets that no longer have a DOE mission after being remediated to a specified land use. LM promotes beneficial reuse activities that are consistent with final cleanup objectives, compatible with long-term maintenance, and protective of human health and the environment. Our reuse activities are environmentally sound and retain good stewardship of natural resources.

LM's overall goal for beneficial reuse is to revitalize 100% of available DOE-owned sites and implement multifaceted reuse at as many sites as feasible. LM implements DOE's integrated land-use planning processes, taking into account environmental, economic, ecological, social, and cultural factors affecting each site or parcel of land. LM supports seven categories of reuse: disposal, renewable energy, conservation, commercial/industrial, community, agriculture, and cultural resources.

To pursue national and regional initiatives, LM collaborates with internal and external working groups when developing beneficial reuse opportunities. These activities include supporting adjacent land uses or local community master plans on properties that are owned or managed by multiple entities. For example, conservation reuse is a viable option for many of the LM sites, and it provides various environmental, economic, and societal benefits. Ecologically revitalizing a site encourages recreational activities and economic development such as tourism, agriculture, and urban development.

The beneficial reuse of any site must be consistent with the level of cleanup at closure or completion of the remedy that is protective of human health and the environment. Some regulatory authorities require land use and reuse considerations as part of determining the remedial action objectives for the remedy selection and implementation (e.g., CERCLA or RCRA sites). Other regulatory programs and authorities do not have requirements that consider future land use within the context of the closure for protection of human health and the environment, but will allow a change in land use under certain circumstances (e.g., UMTRCA).

LM's preferred option is to transfer the land to another party to reduce its overall land inventory and minimize LTS&M costs. However, many LM sites are not suitable for transfer because of the nature of the contaminants and restrictions on land use imposed by regulations or statutes. For those sites, LM evaluates other types of reuse opportunities that might enhance a site's value and performance consistent with the LTS&M Plan, including encouraging collaboration between the public and private sectors to provide reuses for properties that would otherwise remain unused. Not all LM sites are suitable for beneficial reuse at the time of closure, but as communities change and technologies advance, new options that can protect human health and the environment while providing beneficial reuse may become available.

LM often revitalizes legacy sites by replanting vegetation, creating and encouraging ecosystems, and enhancing habitat areas for threatened or endangered species. Revitalizing natural habitats and creating green spaces promotes recreational opportunities, which can spur economic and overall community development. In addition to ecological efforts, we use several of the assets in our portfolio as visitors and interpretive centers to provide valuable information to communities about their contributions, the history of sites, the cleanup, and ongoing long-term stewardship activities. The centers not only provide physical space for community use and enjoyment, but also provide opportunities to collaborate and partner with community members and other organizations. These community spaces and activities can lead to recreational and educational tourism, which can benefit neighboring communities through job creation and increased revenue. Beneficial reuse partnerships and community engagement may also benefit the surrounding communities by facilitating economic development.

Objectives and Strategies

1. Enhance sustainable environmental performance for facilities and personal property and address severe weather events.

STRATEGIES:

- Meet or exceed goals for federal agencies that include further reduction in greenhouse gas emissions, wateruse intensity, and the percentage of energy obtained from renewable sources, among others.
- Understand regional predictions of severe weather events and evaluate potential impacts of these changes on the performance of remedies and facilities at LM sites.
- Ensure new and existing facilities, whether leased or owned, adhere to HPSB guiding principles and LEED standards.
- Ensure that acquisition and maintenance of IT and other personal property are implemented in accordance with all applicable environmental advocacy programs, to include the ENERGY STAR and WaterSense programs.

2. Optimize the use of federal lands and properties.

STRATEGIES:

- Promote conservation efforts, recreational opportunities, redevelopment for commercial/ industrial purposes, development of renewable energy projects supportive of the remedies, and other beneficial uses on LM sites that remain in federal ownership.
- Collaborate with federal or state agencies, tribal partners, and organizations to enhance land use and contribute to national, regional, and local initiatives.
- Identify, protect, and preserve important natural, cultural, and historic features on LM sites.
- Evaluate the need and eligibility for protection of historic features at LM sites under the National Historic Preservation Act and similar state and local designations.

3. Transfer excess government real and personal property.

STRATEGIES:

- Transfer real property no longer needed for LM site management to other federal agencies, tribal partners, state and municipal governments, or individuals for beneficial reuse.
- Apply federal regulations and programs when disposing of excess government personal property, including IT equipment, to other federal agencies, nonprofit groups, schools, and tribal partners.



Goal 5: Sustain management excellence

Situation Analysis

For more than 15 years, LM has been designated as a high performing organization (HPO). We continue to meet and exceed the requirements to sustain that designation and operate within the set of parameters that were negotiated by LM, DOE's Office of Management, and OMB. We have maintained internal management controls and continue to self-certify that we are meeting the key HPO parameters, including federal staffing levels, budget allocations, acquisition strategies, program outcomes, and performance measures.

Maintaining this organizational excellence becomes increasingly important with the transfer of up to 30 new sites to LM by 2035. As a result, we need to be prepared and positioned by strategically acquiring and allocating our resources to achieve our mission and meet our goals and objectives. We will accomplish this by growing and sustaining a talented, diverse, inclusive, and performance-driven federal workforce in accordance with our Human Capital Management Plan.

Human Resources

LM's mission scope and functions will continue to grow as sites are cleaned up, closed, and transferred. As LM receives additional sites, there will be an increased need for site managers, environmental compliance, real estate, data management, and other services to manage those sites. As the DRUM program winds down, dedicated resources will transition to other work. There will also be a continued need for more staff with multidisciplinary skills. While the LM organization comprises highly qualified professionals, we will continue to recruit experienced personnel who are assigned to positions commensurate with their qualifications and experience, responsible for conducting inherently governmental functions, and appropriately compensated within federal pay scales.

We will need to work hard to maintain our goal of management excellence as experienced federal staff retire and our workload increases and evolves. LM will continue its current recruitment strategies to hire the best talent we can from the private sector, the Department, and other federal agencies. One of LM's core values is "We recognize people are our most important resource and respect and value our collective experience, skills, and diversity." The LM organization's demographics demonstrate that we are one of the most diverse organizations, including a roughly equal male (49%) and female (51%) gender distribution, a 30% minority population representation, and a 20% disability/veteran representation.

We have addressed a serious problem facing the federal government: dealing with an aging workforce. Over the past few years, as employees retired or left the organization for other reasons, we have found that our current workforce is well positioned to address current and future organization needs. The current average age of LM's federal staff is 50, with roughly 17% of the staff eligible for retirement. We are keenly aware of the importance of knowledge management to LM's continued success. Through careful planning, we have documented the need for knowledge transfer through succession planning and will continue to take additional steps to address the potential impacts of future retirements. These efforts include a focus on employee retention with an emphasis on supporting a mobile workforce and hybrid work environment, encouraging a healthy work-life balance, and providing leadership and developmental training to lower grade personnel with opportunities for advancement.

To sustain management excellence, LM will continue to encourage employees to take the annual U.S. Office of Personnel Management (OPM) Federal Employee Viewpoint Survey (FEVS), and management will take action based on those results. For the past several years, LM has maintained a participation rate higher than 90%. LM management takes the results of these annual surveys seriously. Each year, action plans are developed to address areas within the survey that fall below the DOE average and to address employee concerns as well as any negative trends.

Planning, Budget, and Acquisition

Since the inception of LM, the Department and Congress have acted in concert to provide the organization with sufficient budget resources to carry out the mission. Congressional appropriations are distributed using a variety of procurement mechanisms, with the largest one being a nationwide small business strategic partner to help execute LM's mission. To facilitate governmental, regulatory, and tribal interactions, LM uses a variety of mission support agreements such as grants, cooperative agreements, and interagency agreements.

LM continues to develop and maintain high standards for planning, budget programming, and acquisition. We have improved the efficacy and effectiveness of our planning and budgeting by implementing an LM Planning, Programming, Budgeting, and Execution records system to support our annual budget planning workshop and budget submissions.

Center, U.S. Geological Survey).

Program and Project Management

LM places a high priority on the use of program and project management principles and tools to manage activities. An emphasis on sound project management is consistent with the Department's policies and directives for project management. LM uses a graded approach for project management that is appropriate for large environmental projects, complex IT system development, and collaboration with other parts of the Department and other federal agencies. This graded approach includes a tailored adaptation of DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets, to meet LM project management needs and requirements. We recognize one of the fundamental elements to effective program and project execution is change control. LM employs an established governance process that includes a Change Control Board to control, manage, and adjudicate programmatic changes.



Tsosie (formerly LM engineer and hydrologist, now assistant director for hydrologic studies for the Washington Water Science

Environmental Liability

LM's environmental liability has remained stable over the past several years based on taking steps to reduce our environmental liability at current sites, such as exploring alternative approaches for reducing residual contamination. However, with an estimated 30 sites to be transferred to LM over the next 10 years, we expect our environmental liability to grow commensurate with the complexity of the sites transferred.

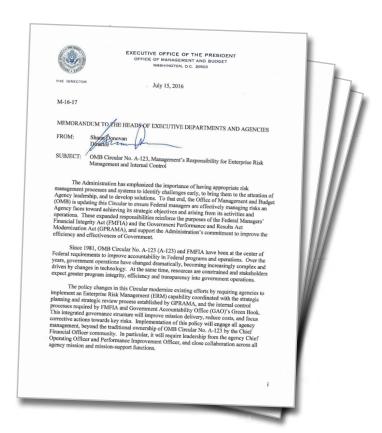
LM's life-cycle baseline planning and evaluation process allows us to manage our environmental liabilities more effectively. This includes the use of cost control and improved cost estimating processes to estimate life-cycle costs more accurately, to systematically review estimated costs at budget workshops, and to facilitate management team reviews of LM priorities and associated budget estimates. Our process is strengthened based on an in-depth understanding of unique site conditions to gain insight into stewardship requirements, as well as potential site risks. This information allows us to develop more accurate life-cycle baselines and document the environmental liabilities with more confidence.

Risk Management

LM has implemented risk management practices to provide for an intentional and data-driven risk management strategy for prioritizing funding and other resource allocations for management of sites and support activities. A primary tool for this is a site risk-ranking methodology, which assesses all the LM sites (including those transitioning soon) on a set of common factors, including:

- Human Health Risk: Likelihood that human receptors can be exposed to unacceptable levels of site-related contamination.
- Stakeholder Risk: Likelihood that the status of a
 given site can be affected or questioned in some
 way based upon input from stakeholders (individuals
 or organizations). Scrutiny could lead to a need for
 conducting additional studies or characterization
 at the site. This could also lead to reevaluating an
 existing remedy or selecting a different remedy.
- Regulatory Risk: Likelihood that a site will not attain compliance goals (as in the case of sites where groundwater remediation is ongoing) or that compliance will not be maintained into the future (if the remedy is no longer operating properly or site conditions change).
- Institutional Control Risk: Likelihood that ICs could be violated in the future.

The inclusion of site complexity and site hazard vulnerability criteria in site risk ranking also provides additional context to where one site may be expending more resources than another. In addition to prioritizing funds for site management, the results of the risk ranking helps LM make science- and technology-based investments through programs such as Applied Studies and Technology and the National Laboratory Network.



LM also performs a programmatic risk assessment annually in accordance with OMB Circular A-123, Management's Responsibility for Enterprise Risk Management and Internal Control. This annual programmatic risk assessment provides LM management with an understanding of where the areas of highest programmatic risk reside within the organization and a basis for prioritization of resources to help mitigate systemic areas of high risk. Our risk management process is certified annually in accordance with U.S. Government Accountability Office (GAO) standards.

Environmental Compliance, Safety and Health, and Quality Assurance

Integration of LM management systems associated with environmental compliance and sustainability, safety and health, and quality assurance into our day-to-day practices enhances the effectiveness and efficiency of LM operations. These systems are part of an overall management framework that identify organizational structure and planning, responsibilities, support resources, and operations by which LM accomplishes its mission. While this strategic plan addresses aspects of our Environmental Management System in Goals 1 and 4, safety and health and quality assurance are also key elements in management excellence.

Environmental: The Environmental Management System (EMS), which includes an Energy Management System, is a systematic process for reducing environmental impacts that result from LM work activities. Intended strategic outcomes of the EMS include: fulfillment of compliance obligations, enhancement of environmental and energy performance, and achievement of environmental and energy objectives. The EMS incorporates the requirements of DOE Order 436.1A, *Departmental Sustainability*, using the International Standards Organization (ISO) Standards 14001:2015 and 50001:2018 as the chosen national standards.

Safety and Health: We consider no aspect of our mission more important than ensuring safe and healthy work conditions for all LM employees, contractors, subcontractors, and visitors, including regulators, at legacy sites, offices, and other work areas. This is achieved by fostering a culture focused on awareness, open communication, safety education and supervision, and safe working methods. Because LM sites are in a variety of environments and settings, we implement tailored safety and health programs and systems, including an Integrated Safety Management System (ISMS) as outlined in DOE Order 450.2, Integrated Safety Management. Safety and health are also the responsibilities of every person. If an LM employee, contractor, or visitor observes a situation or feels that something they are asked to do is unsafe, they have a right to ask for work to pause or stop until the problem is addressed or until everyone is satisfied the activity will be completed safely.

LM provides safety program management, technical oversight, and expertise in the fields of industrial safety and hygiene, occupational safety, construction safety, radiation protection, fire safety, accident/incident investigation and reporting, and safety and health training. LM sustains an aviation program, using small uncrewed aircraft systems, or drones, to conduct surveys that collect aerial photographs and light detection and ranging data. Aviation safety is an important part of this program and is enveloped within the ISMS.

In addition, we are augmenting our comprehensive Emergency Management Program (EMP), including site-specific requirements for all our field offices, our sites that have federal and/or contractor workers assigned to them, and our "unoccupied" sites. Because many of our sites have little or no infrastructure, LM works closely with local first responders for EMP augmentation. LM is using more effective systems to notify, account for, and communicate with our federal and contract partner staff in the event of an emergency or catastrophic event. We are also implementing measures to ensure the continuation of necessary business functions and to effectively communicate with stakeholders in the event of a catastrophic event.

As part of our safety and health program, LM implements the Federal Employees Occupational Safety and Health Program, Title 10 *Code of Federal Regulations* 851, "Worker Safety and Health Program," and we have an Integrated Safety Management program to ensure compliance with federal and state laws, DOE Orders, codes, standards, guides, federal and state regulations, and industry best practices.

Quality Assurance: LM has implemented a Quality Management System (QMS) and Performance Assurance (PA) processes and programs to assure work is performed in a compliant manner that consistently meets or exceeds mission objectives while minimizing potential hazards to the environment, the public, and workers. LM's program incorporates the requirements of DOE Order 414.1D, *Quality Assurance*, using ISO Standard 9001:2015, *Quality Management Systems — Requirements*, as the chosen national standard. Our QMS and PA management systems ensure requirements are identified and integrated into LM procedures and work activities are adequately described in documents such as work plans and procedures.

Objectives and Strategies

1. Sustain a talented, diverse, inclusive, and performance-driven workforce. STRATEGIES:

- Recruit, develop, and retain a highly skilled, best-inclass workforce through recruitment of diverse talent.
- Promote a performance-based culture and ensure both the federal and contractor workforces are properly incentivized and rewarded.
- Actively develop strong leaders throughout LM through leadership development programs.
- Encourage employee professional development by using rotational assignments, supporting intra-agency details, and providing funding for education and training.

2. Develop and maintain high standards for planning, budgeting, acquisition, and program and project management.

STRATEGIES:

- Develop, maintain, and review procedures for major financial management functions and implement leading program, project, and business management practices.
- Fully examine the most cost-effective methods for acquiring goods and services, such as small business contracts, cooperative agreements, and financial agreements.
- Implement program, project, cost estimating, and contract management training.
- Use a transparent corporate approach to manage our financial resources.
- Develop and maintain a robust internal controls program to assure operational effectiveness and efficiency.

3. Improve the quality, efficiency, and effectiveness of site management and business support activities.

STRATEGIES:

- Prioritize financial investments to address highest risk site management activities.
- Enhance the quality of LM products and services by revising policies, procedures, and processes, as necessary.
- Implement effective and efficient service delivery.
- Increase customer satisfaction by empowering personnel with high-quality information, equipment, technology, and services.

4. Ensure protection of workers, the public, and the environment. STRATEGIES:

- Foster a safety culture of continuous performance improvement.
- Ensure procedures are integrated into management and work practices.
- Set objectives to sustainably continue environmental stewardship and safety.
- Increase awareness of potential hazards by conducting environmental, safety and health, and quality-assurance training for LM federal and contractor personnel.
- Complete the Integrated Work Control Process prior to commencing site, project, and program activities at an LM site.
- Conduct emergency management exercises and drills to ensure site personnel are prepared in the event of an emergency.
- Conduct oversight assessments to identify and mitigate potential hazards or compliance issues.
- Capture and communicate lessons learned (or operational experiences) to continuously improve the effectiveness and compliance of operations.
- Leverage incident management processes to ensure issues that impact the safety, quality, environmental compliance, or effectiveness of operations are captured, analyzed, reported, and corrected to prevent future reoccurrence and reduce risk.

Goal 6: Engage the public, governments, and interested parties

Situation Analysis

LM's success depends on connecting and effectively communicating with the public, other government organizations, impacted stakeholders, and tribal partners. Accordingly, public outreach, intergovernmental collaboration, and effective dialogue with tribal partners are central to all our work and remain high priorities. LM management and staff recognize that engaging the public and governmental organizations is critical to achieving virtually all objectives of the organization. Engaging the public, governments, and interested parties includes strategic outreach, interpretive services, and participation in environmental justice (EJ) efforts. Outreach often takes the form of person-to-person interaction between LM and community members at open houses, site tours, and interpretive centers.

LM understands that two-way communication with stakeholders is crucial and valuable. One advantage of two-way communication is the benefit of hearing the stakeholder's perspective, especially at remote sites. LM relies on local residents who live near some of our most remote sites to help

maintain site integrity. Community members have also been helpful in notifying LM of localized natural events (e.g., flash floods), that might require LM to conduct additional inspections and repair work at a site. We continue to seek ways to measure and improve stakeholder satisfaction, including conducting stakeholder surveys every five years to evaluate the effectiveness of outreach efforts. We will continue to conduct and leverage these surveys.

LM will also improve stakeholder engagement by enhancing vertical integration of outreach activities within the organization. Policy and broad goals that are developed at a national level will increasingly be more site- and program-specific and be implemented at the team level. Such vertical integration will ensure that important information is shared consistently across the broad spectrum of LM's public, intergovernmental, and tribal partners.

LM has also assigned public participation specialists to each of the site operations team locations. The specialists are embedded into the environmental teams, regularly collaborating with their counterparts. This integration provides more efficient, proactive, effective, and responsive communication of planned and unplanned events to stakeholders. This organizational alignment also allows the communication team to develop and implement more effective plans that are closely aligned with field operations.



Engaging the Public

LM public engagement efforts currently include the following:

- Quarterly LM Program Update newsletter More than 300 hard copies mailed and more than 16,000 electronic copies sent to stakeholders.
- Website Receives thousands of page views monthly.
- Social media posts on multiple platforms.
- Interpretive and visitors centers to communicate history, educate the public, and share information on site remedies.
- · Partnerships that communicate DOE's rich history.
- Site visits for regulators; federal, state, and local governmental officials; tribal partners; international organizations; the press; and members of the public.
- Formal and informal consultation with tribal partners.
- Publications in peer-reviewed journals.
- News releases.
- Hosting public meetings, workshops, internships, Community Leaders Institutes, and other professional engagements.
- Participating in professional meetings.

Stakeholders continue to expect timely access to information that is delivered in a user-friendly fashion. As a result, LM completed a major effort to enhance access to site environmental data and information through our internet-based GEMS. Interactive webbased tools provide customized reporting on multiple data types to internal and external stakeholders.

Interpretive and visitors centers are also an effective means of connecting with the public. In addition to operating existing centers, LM is evaluating partnerships with other government agencies, museums, and educational institutions to expand access to current and legacy information. LM is also evaluating ways to better preserve the history of the Manhattan Project and Cold War. Preservation of our sites' history is a key element in protecting future generations from long-lived residual contamination.



Working with Local, State, and Federal Governments

LM has been, and will continue to be, active with national organizations. We also work closely with state and federal regulators to share information, collaborate on environmental solutions and public meetings, and understand and address potential impacts (e.g., land use and/or land restrictions) to surrounding areas.

In many cases, LM also works closely with local governments on developing reuse and economic opportunities and ensuring sites remain protective of human health and the environment. For example, ICs such as deed restrictions are often enforced by local governments. Increasingly, federal agencies also rely on intergovernmental collaborations to accomplish their missions. Local government engagement is important to LM's success. We will continue to look for opportunities to expand the use of community advisory groups to enhance community engagement.

Working with Tribal Partners

LM is committed to regular and meaningful communication with tribal partners and government-to-government consultation with an array of Native American and Alaska Native communities who are partners in our commitment to long-term monitoring and surveillance. We routinely collaborate on site inspections and environmental monitoring, document review, natural resources management, and community outreach. We will continue to seek increased opportunities for tribal partners in our operations.

LM currently conducts long-term stewardship and maintenance on sites located on or near multiple tribal and Alaska Native communities. Cooperative agreements and grants for affected tribes provide financial support for technical oversight of LM's activities on their lands.

We also work closely with the State and Tribal Government Working Group (STGWG), part of the National Conference of State Legislatures. STGWG is composed of states and Native American tribes and engages directly with DOE on issues related to the cleanup of the nuclear weapons production complex. STGWG representatives provide recommendations to ensure that operation and cleanup activities follow all federal and state laws and regulations and tribal rights, including those retained by treaty, conferred by statute, and protected by the federal trust responsibility.



Back row, left to right: Former Navajo Nation President Jonathan Nez; LM Site Manager Joni Tallbull; Miss Navajo Nation Valentina Clitso; LMSP Navajo Nation Outreach Coordinator Kayla Bia; and LM STEM Coordinator Shawn Montgomery. Front row, left to right: LMSP Hydrologist Katie McLain; LMSP Hydrologist Stacy Trowbridge; and LMSP Navajo Nation Public Affairs Specialist Lillie Lane.

Environmental Justice

LM ensures site management activities comply with Executive Orders focused on environmental justice. By continuing our efforts to review, plan, and implement EJ commitments, we will secure integration of EJ into our policies, programs, and activities. We have made significant progress in engaging minority and low-income communities, Native Americans, and Alaska Native communities in the decision-making process. This is reflected through ongoing long-term stewardship and maintenance activities, such as LM's participation in the 10-Year Plan Federal Actions to Address Impacts of Uranium Contamination in the Navajo Nation and rehabilitation and community reuse of former defense nuclear facilities and other properties.

In addition to ensuring community involvement in decision making, we have also continued to pursue educational partnerships for the public by working with a variety of culturally distinct and disadvantaged communities. The partnerships include public open-house sessions at LM-managed sites, Community Leaders Institute engagements, educational opportunities such as Teach Radiation, Energy, and Technology Workshops for K-12 teachers, student site visits, and Environmental Scholars Program internships that provide hands-on mentoring and work experience at LM's Grand Junction office in Colorado and DOE sites and laboratories.

Training sessions on tribal culture, regulations, and environmental ethics are conducted for LM staff on a regular basis. To enhance collaborations with communities of the Aleutian Chain, Pribilof Islands, and lower Alaska Peninsula, DOE's Environmental Justice Program and the Arctic Energy Office have established a new financial assistance agreement to provide support to the region's communities to participate in our shared interests in energy and environmental justice. We also continue to play a key role in federal-wide efforts to provide training to all federal employees and promote the national Environmental Justice Conference and Training Program interactive dialogue on EJ.

International Activities

In addition to engaging and working with local and state governments, other federal agencies, and tribal partners, LM will continue to contribute and share lessons learned with professionals in other nations and with international organizations that are mutually beneficial to addressing environmental remediation and long-term stewardship.

In FY 2024, LM signed a Practical Arrangement to work more formally with IAEA, an independent intergovernmental organization within the United Nations that serves as a global focal point for nuclear cooperation. Because of LM's experience with abandoned uranium mines and mills, the Office will provide technical support to IAEA efforts to address areas of concern in the former Central Asian republics of the Soviet Union. The IAEA International Working Forum on the Regulatory Supervision of Legacy Sites (RSLS) was initiated in 2010 to improve short- and long-term management of contaminated legacy sites in member states around the world. LM is contributing to the work plan for the next phase of RSLS, which will include greater focus on post-closure management of remediated sites and engaging people who live near sites. LM will help by communicating best practices for management of legacy sites and will host visitors from other member states so they can learn firsthand how LM addresses post-closure requirements at its sites.

LM is also continuing its mutual assistance agreement with Wismut GmbH, the federally owned German company responsible for the world's largest mine closure program, in former East Germany where uranium was mined for use by Russia during the Cold War. Initiated in 1991, the Wismut program is nearing the point of having many of its sites enter long-term stewardship and wishes to benefit from LM's experience and business model. In turn, Wismut GmbH has already put into beneficial reuse many of its sites, an accomplishment that can assist LM in its reuse efforts. LM will continue other exchanges with the Nuclear Decommissioning Authority of the United Kingdom and with the Canadian Nuclear Safety Commission.



Objectives and Strategies

1. Engage the public in our program, project, and site activities.

STRATEGIES:

- Adapt communication methods that are most effective or preferred by the public and communicate broadly through the selected methods and tools.
- Expand and enhance the operation of interpretive and visitors centers at LM sites, including communicating the importance of current LM activities and each site's role in the history of the Cold War.
- Preserve, protect, and interpret the histories of LM sites, including their roles in the Manhattan Project and Cold War.
- Analyze feedback from stakeholders to modify approaches and improve outreach.
- Provide training to improve the public engagement skills of LM employees.
- Conduct Community Leaders Institutes around the country.
- Conduct Teach Radiation, Energy, and Technology workshops for K-12 students, teachers, and communities.
- Provide mentorship for the Environmental Scholars
 Program using pilot initiatives for undergraduates
 to gain employment in various research and
 management positions within DOE.

- 2. Work effectively with local, state, and federal partners; non-profit organizations; international organizations; and other countries. STRATEGIES:
 - Build and maintain effective intergovernmental partnerships.
 - Actively participate in collaborative efforts that are important for LM to meet performance goals (e.g., interagency work on defense-related uranium mines) and identify new beneficial site reuse opportunities.
 - Use intergovernmental relationships as a means of sharing lessons learned, operational experiences, and leading practices.
 - Leverage long-term stewardship leading practices through agreements that LM has established with international organizations and with other countries.



3. Consult and collaborate with tribal partners.

STRATEGIES:

- Participate in national forums that involve tribal partners such as STGWG and the Tribal Leaders Summit hosted by the Secretary of Energy.
- Participate in educational and outreach activities organized by our tribal partners.
- Partner with Native American and Alaska Native communities throughout the NEPA process.
- Fulfill commitments for engagement through implementation of programmatic agreements for the ULP and other programs.
- Provide opportunities for Native American students and scholars to have internships with LM.
- Ensure native-language speaker availability to enhance the experience of outreach events with different tribal partners.
- Engage tribal partners regarding ways to improve the effectiveness of long-term stewardship and maintenance, including better understanding their concerns, keeping them informed, asking for and listening to their input, and involving them in decision making.

4. Support DOE's historic preservation program.

STRATEGIES:

- Comply with National Historic Preservation Act requirements for all site, project, and program activities.
- Conduct historic preservation reviews as stipulated in programmatic agreements.

5. Implement Environmental Justice Executive Orders and federal actions to address environmental justice. STRATEGIES:

- Provide high-quality EJ training to the LM workforce.
- Identify and perform outreach to EJ communities and leaders near LM sites.
- Partner with EJ communities to address environmental concerns.
- Leverage Department and other federal agency EJ work.
- Provide mentors for the Environmental Scholars Program.
- Enable community capacity building through technology.



Program Performance Evaluation

LM's performance is evaluated by a diverse group of organizations in a variety of ways. The internal and external evaluation processes serve as benchmarks for continuous performance improvement. LM and our contractors also have self-assessments and internal audits to evaluate performance and cost-control effectiveness.

At the federal level, LM is regulated by DOE, EPA, and the U.S. Nuclear Regulatory Commission. GAO conducts reviews that address several aspects of LM's mission.

Within the Department, specific areas of performance are evaluated by the inspector general; the Office of the Chief Financial Officer; the Office of Environment, Health, Safety, and Security; the Office of Enterprise Assessments; the Office of the Chief Information Officer; the Office of Management; and the Office of Human Capital. Other organizations also review LM's programmatic performance on a regular basis.

Local, state, and federal government agencies and tribal partners review LM's performance. LM regularly solicits and welcomes feedback on its mission-related activities from stakeholder and intergovernmental groups. In addition to regular informal feedback, some intergovernmental groups conduct surveys on major DOE programs with site and community responsibilities.

LM also receives formal and informal feedback from members of the communities near our sites and from retired contractor workers who receive retirement benefits from contractors funded by LM. The people located near LM sites and retirees are the stakeholders most impacted by LM activities.

LM's internal evaluations and audits include reviews of our contractors' performance, our own assessment of programmatic performance, and individual federal employee reviews within the context of a federal employee performance management system.

Performance information is used by LM to identify lessons learned, leverage knowledge, and improve service delivery and outcomes. We carefully adopt and monitor the implementation of performance measures to establish program priorities and provide program direction. As a relatively small federal program, LM is typically limited to one or two performance measures in the Department's budget. However, we have established performance measures in our HPO plan and periodically evaluate our performance and progress against the goals, objectives, and strategies in this plan as part of our HPO commitments with OMB.



ACRONYM LIST

AEC	U.S. Atomic Energy Commission
BLM	U.S. Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
D&D	Decontamination and Decommissioning
DOE, Depa	rtment U.S. Department of Energy
DRUM	defense-related uranium mines
EJ	Environmental Justice
EM	Office of Environmental Management
EMP	Emergency Management Program
EMS	Environmental Management System
EPA	U.S. Environmental Protection Agency
FEVS	Federal Employee Viewpoint Survey
FUSRAP	Formally Utilized Sites Remedial Action Program
GAO	U.S. Government Accountability Office
GCAP	Groundwater Compliance Action Plan
GEMS	Geospatial Environmental Mapping System
HPO	high performing organization
HPSB	High Performance and Sustainable Building
IAEA	International Atomic Energy Agency
IC	institutional control
ISMS	Integrated Safety Management System
ISO	International Standards Organization
IT	information technology
LEED	Leadership in Energy and Environmental Design

LM Office of Legacy Management
LMBCLegacy Management Business Center
LMSPLegacy Management Support Partners
LTS&Mlong-term surveillance and maintenance
MED Manhattan Engineer District
NARANational Archives and Records Administration
NEPANational Environmental Policy Act
NNSANational Nuclear Security Administration
NPSNational Park Service
NWPANuclear Waste Policy Act
OMB Office of Management and Budget
OPMU.S. Office of Personnel Management
PAPerformance Assurance
PFASper- and polyfluoroalkyl substances
QMSQuality Management System
RCRAResource Conservation and Recovery Act
RSLSRegulatory Supervision of Legacy Sites
SRNLSavannah River National Laboratory
ULPUranium Leasing Program
UMTRCA Uranium Mill Tailings Radiation Control Act
USACE U.S. Army Corps of Engineers
USFSU.S. Forest Service
USGSU.S. Geological Survey
STGWG State and Tribal Government Working Group

LM SITE MAP THROUGH 2035







NWPA





Program



Quality

Standards



UMTRCA

Title I



Nevada Offsites

Category 2 activities typically include routine in integrity of engineered or institutional barriers) ar **UMTRCA** activities, and stakeholder support. Title II

Category 1 activities typically include records-re

For the most current site information please view the Site Management Guide on https://www.energy.gov/lm/sites.





Site Category

lated activities and stakeholder support.

spections (site visits are conducted to verify the ad monitoring/maintenance, records-related

Category 3 activities typically include operation and maintenance of active remedial action systems, routine inspections (site visits are conducted to verify the integrity of engineered or institutional barriers) and monitoring/maintenance, records-related activities, and stakeholder support.

D/P = Disposal/Processing DR = Decommissioned Reactor





Legacy Management



