OFFICE OF LEGACY MANAGEMENT
Commitment to Stewardship
TWENTY YEARS

JANUARY-MARCH | **2024**

PROGRAM UPDATE

DIRECTOR'S CORNER

Chapters Still Being Written in LM's Incredible Story

On many occasions such as anniversaries or birthdays, there's an opportunity for reflection and appreciation, whether it's for a personal relationship, business, or historical event.

This has certainly been our intent in recent months with the U.S. Department of Energy Office of Legacy Management's 20th anniversary celebration.

The campaign ends in March 2024 and includes LM's first podcast — a four-part series released in December. We also had a celebration event at DOE headquarters on Dec. 6 that we broadcast to sites throughout the LM complex. And we featured many current and former LM staff, who tell LM's history through their varied perspectives. These features can be seen on LM's website and Facebook and LinkedIn pages.

Museum Collections Specialist and Historian Taylour Whelan interviews LM Director Carmelo Melendez for Part 4 of LM's first-ever podcast series.

We created a video series, six in total; each video outlines one of LM's goals to tell a collective story about what we do and what we've done. In March, we'll celebrate our anniversary with several activities at the Waste Management Symposia — a long-standing international conference on radioactive waste management — in Phoenix, Arizona. And of course, we're promoting the anniversary at our sites with signage and through our digital and print publications.

The product you're reading is also part of our efforts to recognize LM's anniversary. This special edition of *Program Update*, LM's quarterly magazine, explains our programs and gives LM historical context that dates back to World War II and the Cold War.

Inside you'll see the breadth of LM's work, the people who were — and are — behind it. You'll see how we communicate our work with our communities, tribal partners, other agencies, and stakeholders. You'll see how we work with students to teach them the wonders of science and how we promote STEM-related fields to develop the next generation of great scientists and engineers in a time of great technological advancement.

Although it's certainly a time to look back and appreciate the journey we've made, it's also a good opportunity to set our sights ahead and think about the next set of challenges for our Office. As we look forward, there are priorities we will strive toward in the future to make sure the federal government holds up its end of the bargain to communities that have sacrificed so much in our collective pursuit to uphold democracy.

THOSE PRIORITIES INCLUDE:

- Maintaining and defending environmental remedies at LM sites with technical competence.
- Positively accounting for financial, information, and physical assets with business acumen.
- Communicating and collaborating effectively with stakeholders with an objective sense of environmental justice.

Generally, people find satisfaction when they're part of something — a team, a movement, a mission. I hope that all current and former LM staff and support contractors share the same pride and sense of belonging I have in LM's work throughout its history. It is a success story — one that we're proud of — and we're still writing new chapters.

Whether it's the story you'll find inside these pages of our 20-year history, the projects we're performing today, or the work that will occur over the next 20 years and beyond, LM's work is noble, and we are not doing it alone.

Together, with our many partners, we celebrate our past and look forward to the challenges ahead.

Warm Regards,

Carmelo

Carmelo Melendez

TWENTY YEARS

GOAL **ONE**
Protect human health and the environment.

GOAL **TWO**
Preserve, protect, and share records and information.

GOAL **THREE**
Safeguard former contractor workers' retirement benefits.

GOAL **FOUR**
Sustainably manage and optimize the use of land and assets.

GOAL **FIVE**
Sustain management excellence.

GOAL **SIX**
Engage the public, governments, and interested parties.

INSIDE THIS UPDATE:

Welcome to the January-March 2024 issue of the U.S. Department of Energy Office of Legacy Management ***Program Update***. This publication is designed to provide a status of activities within LM. Please direct all comments and inquiries to LM-ProgramUpdate@lm.doe.gov.

Scan the QR code to learn more about Twenty Years of Legacy Management.

New Office's Mission Began With Four Management Goals

Within 12 years, LM had expanded its guiding principles to promote sound management and communication with interested parties

In December 2003, then-Secretary of Energy Spencer Abraham authorized the U.S. Department of Energy to create a new program office made up of staff of the Office of Worker and Community Transition and personnel from the Office of Environmental Management's Office of Long-Term Stewardship.

What resulted was the Office of Legacy Management. The newly created office included about 16 staff members in Grand Junction, Colorado, and EM-funded personnel from the National Energy Technology Laboratory locations in Morgantown, West Virginia, and Pittsburgh, Pennsylvania. Its mission was to safeguard post-closure sites that had been part of the nation's nuclear weapons complex to ensure protection of human health and the environment.

Abraham appointed Office of Worker and Community Transition Director Michael Owen to lead LM.

"The establishment of the Office of Legacy Management demonstrates the Department's continued commitment to manage sites where active remediation has been completed, as well as our commitment to the contractor workforce that will be affected by changing Departmental missions," Abraham said at the time.

When LM began operations in late 2003, leaders of the fledgling program office set forth four management goals to guide LM's mission:

Goal 1 — Protect human health and the environment through effective and efficient long-term surveillance and maintenance.

Goal 2 — Preserve, protect, and make accessible legacy records and information.

Goal 3 — Support an effective and efficient workforce structured to accomplish Departmental missions and ensure contractor worker pension and medical benefits.

Goal 4 — Manage legacy land and assets, emphasizing protective real and personal property reuse and disposition.

This mission scope remained unchanged until 2007. That year, LM developed a strategic plan to guide the office's activities through 2020. The plan provided objectives, strategies, and success indicators and also added a fifth goal to its management principles.

LM created goal five to improve program effectiveness through sound management. LM officially made that guidance part of its mission in late 2007.

"This goal recognizes that Legacy Management's goals cannot be attained efficiently unless the federal and contractor workforce is motivated to meet requirements and work toward continuous performance improvement," the strategic plan read.

LM developed its next strategic plan in 2015 to guide the Office from 2016 through 2025. In the plan, LM added a sixth management goal to its mission, directing LM staff to engage the public, governments, and interested parties in the Office's activities.

"We believe effective collaboration with other government agencies, tribal nations, nonprofit organizations, and the public will improve our ability to achieve our goals and objectives," the 2016-2025 Strategic Plan read. "This plan emphasizes our continued commitment to collaboration by including a new goal focused on public and intergovernmental engagement."

A strategic plan to guide the Office from 2026 through 2035 is underway. LM is responsible for surveillance and monitoring at 102 sites and expects that number to keep growing. The Office will continue to refine its management goals as the mission requires, said LM Director Carmelo Melendez.

"As our caseload grows, our mission scope changes over time," Melendez said. "We are constantly evolving and growing. As new remediation technologies are put into practice and new challenges are identified, our mission must also change to fit an evolving landscape." ■

Spencer Abraham

"The establishment of the Office of Legacy Management demonstrates the Department's continued commitment to manage sites where active remediation has been completed, as well as our commitment to the contractor workforce that will be affected by changing Departmental missions."

Getting Down to Business: Parks Explains Vital Role OBO Plays Within LM

Edwin "Doc" Parks emphasizes the importance of Legacy Management's missions

Recently, Director of Business Operations Edwin "Doc" Parks celebrated his 13th anniversary with the U.S. Department of Energy Office of Legacy Management. After his promotion in February, Parks' new position presents a new set of responsibilities and more opportunities to support the LM mission.

In his new role at the Office of Business Operations, Parks currently manages the business functions and programs for more than 100 closed sites across the United States and Puerto Rico.

"The role of the OBO is to ensure that we're providing the LM mission the best customer service we possibly can — we take care of LM's finances, contracting, facilities, vehicles, real estate, information technology, human resources, security, and records and information management," Parks said.

The OBO oversees post-retirement benefits for retired contractor workers formerly employed at legacy sites. The OBO also provides executive oversight of the acquisition, application, and maintenance of technology that best achieves LM's mission and goals.

Since the start of LM in 2003, the OBO has made huge strides and accomplishments, but there is one that sticks out to Parks.

"Although I was not in charge of the OBO at the time, I believe transitioning the former worker pension plans was a tremendous win-win for the taxpayer and the former workers. We successfully retired the taxpayers' liability to pay the pensions by transitioning them to commercial annuities that will ensure the former workers will continue to receive their benefits as promised, no matter what dynamics occur in the development of future federal budgets," Parks said.

The OBO is rarely in the limelight, Parks said, because so much of its work happens behind the scenes. OBO's mission is to assist other departments that are responsible for the fieldwork of protecting human health and the environment.

"OBO is successful when no one knows we're here. And by that, I mean we are in a support role, and when the support functions are working properly the focus and attention stays on those who are carrying out our field-focused mission activities," Parks added.

Edwin "Doc" Parks

Throughout his LM career, Parks received recognition multiple times for his hard work and contributions to the LM mission. These achievements haven't been without challenges, and after almost a year at the OBO, Parks commented that his new position is the same.

"For me, personally, the challenge is not having the time to dig deep into any one of our functional areas. I'm the kind of leader and manager who likes to know the details and really understand the process, but given the breadth of OBO's activities, it simply can't be done. The good news is that we're staffed with highly capable people who don't need my assistance," he said.

The OBO continues to evolve and adapt to meet the growth of LM's activities, expanding its support areas to better achieve LM's goals.

"OBO has brought on the Asset Management Team and functions from Office of Site Operations over the last several years, and we continue to reorganize and shape the way we deliver our business operations support services, such as HR activities and administrative support," Parks explained.

In response to LM's 20th anniversary in December 2023, Parks said his main goals for the OBO over the coming years are "to continue to examine, evaluate, and improve the various business services we provide to the rest of LM, ensuring we can confidently and effectively protect human health and the environment." ■

Technical Services Director Hopes to Evolve New Program

Tania Smith Taylor faces new role with high hopes of making a difference internationally and at home

LM Technical Director for Long-Term Stewardship Tania Smith Taylor has been part of LM since 2016. Smith Taylor has worked in a variety of different roles, serving as the deputy director of business operations and the director of site operations. Before LM, she worked for the Department of Energy Office of Environmental Management, where she led several improvement initiatives for department-wide programs.

Smith Taylor was promoted to technical director in 2023. In this position, she focuses on incorporating advances in science and technology into LM's long-term surveillance and maintenance efforts and other activities; improves collaborations with national laboratories, universities, and other agencies; and oversees LM's international programs.

Previously, the program was run by David Shafer, who was the first in the position. Smith Taylor notes that the main focus over the past two years has been LM's international relationships and seeing what types of things people needed from LM.

"This position has only existed for about two years," Smith Taylor said. "We have seen that our international engagement is extremely important and has benefits here and abroad."

Even though the position is new, Smith Taylor has seen LM's international engagements shift over the years.

"When I started at LM, we had some international relationships, but it was an offshoot of one LM member's previous experience with a working group within the International Atomic Energy Agency. The group was very interested in mine closures and our management of uranium mine tailings, but there were only one or two people engaged with this working group," Smith Taylor said.

Since her start at LM, that interest has expanded. Smith Taylor added that more people around the world are starting to think about not just the remediation of sites, but how to care for them afterwards. LM has recognized the benefit of having an expanded international and technology program that serves the LM mission.

Smith Taylor is also excited to see the program expand and grow even further in the near future.

"We are doing fantastic work on the Applied Studies and Technology program. Over the next year or so, we will reshape the program to better meet LM's needs. We are focusing on better ways to connect the great knowledge obtained under AS&T to LM's operational needs," Smith Taylor said. "We are also focusing on how we communicate those connections, so knowledge is not held by one site manager or one person who worked on a study."

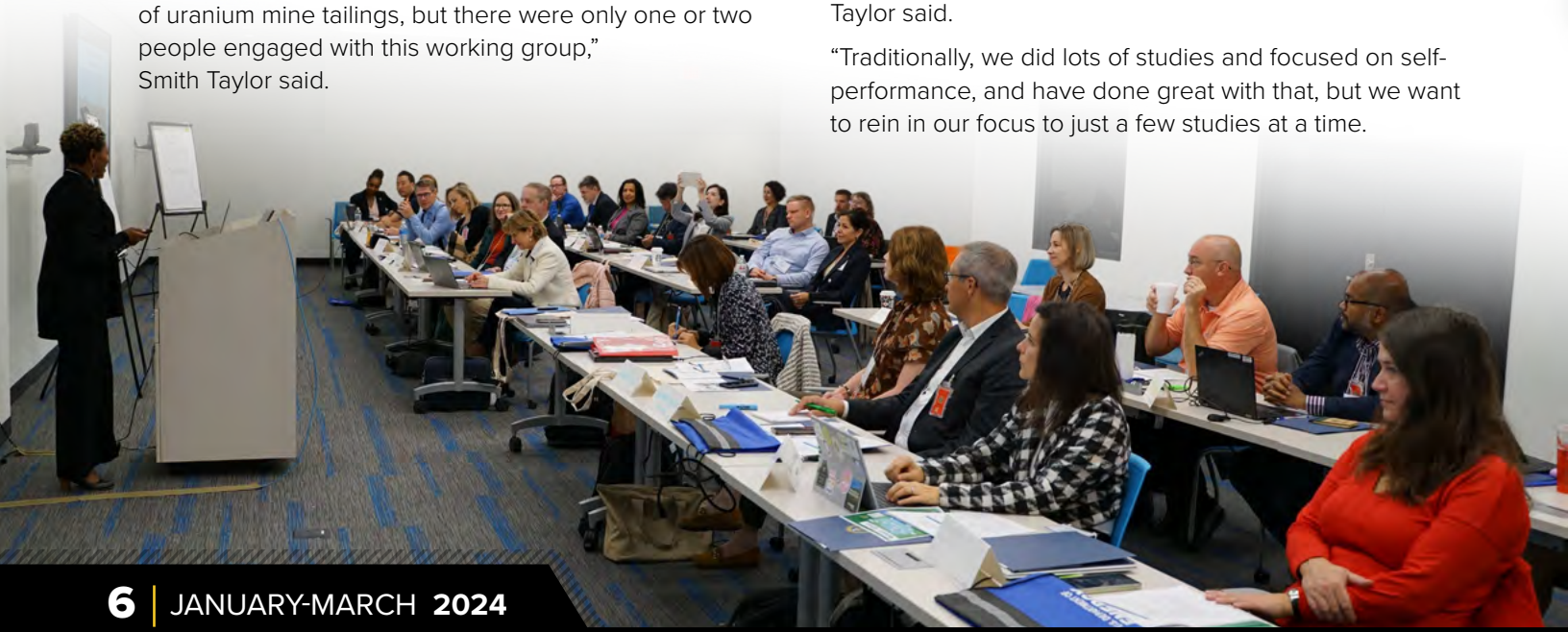
AS&T

The overriding goal of **AS&T** is to incorporate advances in science and technology to improve capabilities toward fulfilling the LM mission.

Smith Taylor added she wanted to do this within the context of information and work overload.

"We don't want to overwhelm our site managers, especially since they are trying to find solutions to interesting situations that arise in the course of their daily workload. We want to be of value to the teams in the field. We have changed our philosophy on how we are running the AS&T program. We only have so many resources and experts, and we were spreading them a bit thin," Smith Taylor said.

"Traditionally, we did lots of studies and focused on self-performance, and have done great with that, but we want to rein in our focus to just a few studies at a time.



> *If we are moving the needle, making the way we do LTS&M more efficient and effective, and solving technical problems for our site operations folks, that is our definition of success.*
>
> **– TANIA SMITH TAYLOR**

We also want to help our folks who may not be intimately involved in AS&T projects digest the resulting information a bit better."

With her ongoing focus on changing and shaping different aspects of LM, Smith Taylor's day-to-day also changes frequently. Smith Taylor's responsibilities have evolved over the years. The director works with different partners within LM, the AS&T program, and different stakeholders; frequently engages LM's international partners; and focuses on different reuse and how to manage it long term for communities around the world.

"Right now, we are working with two working groups in International Atomic Energy Agency on documents they want to use as guidance on standing up an long-term stewardship program. One of those documents focuses on best practices in the program and the other is about general controls, whether those are institutional or physical configuration of a site that's been cleaned up," Smith Taylor said.

Smith Taylor notes that LM has received more inquiries about business and communication aspects of the LM program in addition to requests for technical best practices. She works to consistently bring more people into the international engagement aspects of long-term surveillance and maintenance. For example, LM now has a group focused on stakeholder engagement.

At the end of the day, Smith Taylor said her job "Is all about how we develop our people and how we serve the needs of site managers."

"Having 20 years of experience, LM is at the forefront of LTS&M. We are the leaders and people are learning from us. However, fresh perspectives from international partners help us see some challenges differently. We will always learn from each other. Having these discussions, and engaging with our site managers, light bulbs will go off. There may be a challenge we have that is similar to our partners, especially those in Europe, where physical space is limited and proximity of radiological sites to populations is a challenge. Our site managers are having discussions with our global partners that have helped them view their own site challenges in a new way," Smith Taylor said.

As for how Smith Taylor defines success, she actually believes it to be a pretty simple definition.

"If we are moving the needle, making the way we do LTS&M more efficient and effective, and solving technical problems for our site operations folks, that is our definition of success."

Smith Taylor finds this success by changing the way she approaches new problems.

"There are definitely a lot of challenges because the role is so new. We are evolving and figuring stuff out, identifying where we need to go and making those changes as we go along. There are new technologies that could benefit us in the long run, including AI, but it's all about navigating that with security concerns," she added.

Smith Taylor said one of the challenges is issues related to groundwater in terms of science and a regulatory-approval standpoint. LM currently has around 20 Groundwater Compliance Action Plans in development. Smith Taylor is tasked with trying to figure out what data is missing or if different data is needed altogether.

"It's a little of building the plane as we are flying it," Smith Taylor said.

Smith Taylor is confident that her team and LM leadership as a whole will continue to achieve great things.

"LM has had great leadership. I've seen significant achievements within LM. I've seen the growing of the sites; the expansion of education, communication, history, and outreach; expansion in our personnel; and getting some really great team members on board. Being able to be back on the technical side and getting to fulfill this new role is something I am really proud of. Carmelo has been a great leader for this organization, and we have done and continue to do amazing things." ■

The History and Future of LM's Office of Site Operations

Office of Legacy Management Site Operations Director Jay Glascock reflects on the history of LM's site operations and the goals of the future

The Office of Legacy Management's Office of Site Operations is responsible for carrying out long-term surveillance and maintenance at more than 100 sites across the United States and Puerto Rico.

The OSO performs important activities at transitioning sites before they formally become LM's responsibility, including inventorying real property assets, capturing environmental cleanup spatial data and records, and engaging with regulatory agencies to ensure a smooth and seamless transfer of all long-term stewardship responsibilities. The OSO also runs safety and health, quality assurance, and environmental compliance programs; leads interagency work on the Defense-Related Uranium Mines program; and administers the Uranium Leasing Program within the Uravan Mineral Belt in southwestern Colorado.

All of these programs and the staff involved fall under the responsibility of Director of Site Operations Jay Glascock.

"My day-to-day responsibilities include leading site operations managers and staff, managing and enabling mission execution, ensuring operational activities are functionally integrated, and making certain our activities align with the organization's vision, mission, core values, operating principles, goals, and objectives," Glascock said.

The OSO is a crucial piece of the bigger picture that is LM's mission with many historical accomplishments, including a 2021 project at the Burro Tunnel Mines Complex in Slick Rock, Colorado, where more than 72,000 cubic yards of waste rock was relocated.

"I value the need for consistent collaboration and communication with our partners and stakeholders, as well as taking care of our people. If I do this well, the stewardship activities we undertake to defend the environmental remedies put into place during remediation will happen smoothly," Glascock said. "Ultimately, this will result in the continued protection of human health and the environment at our sites across the United States and in the territory of Puerto Rico."

Glascock also emphasized a few key achievements from the OSO, including:

- **Protecting the workforce and the public** as LM continued to carry out its stewardship mission during the global coronavirus pandemic.
- **Securing key international agreements** to assist nuclear environmental cleanup and long-term stewardship undertaken by the International Atomic Energy Agency, sharing science-based procedures and best management practices.
- **Identifying, analyzing, and mitigating the risks** of more than 3,400 abandoned defense-related uranium mines, surveying nearly 2,300 mines, and safeguarding nearly 900 physical hazards at these mines.
- **Establishing formal partnerships** with the U.S. Army Corps of Engineers, the National Laboratory Network, and many state, local, and tribal agencies to improve the effectiveness of LM's stewardship activities.
- **Taking ownership of the 100th site in LM's portfolio**, adding the Colonie Site in New York to LM's stewardship program and quickly making it available for future redevelopment to benefit the local community.

"There are so many accomplishments that the OSO has completed since I started in 2019. We have had success because we have invested in our people, not only in the OSO, but across the organization as well," Glascock said.

The director also emphasized some significant changes that the OSO and LM have gone through over the years.

"LM has grown not only in size but also in experience and expertise. We have recruited, developed, and retained a top-performing staff across the organization. We have developed strong leaders, whether a team lead, site manager, or program manager, through leadership development programs," Glascock said.

He added, "In doing so, we are better able to adapt to the changing conditions that face our organization and site operations. Circumstances such as increasing site complexity, changing groundwater models, emerging contaminants, uncertain market conditions, and the need for climate resilience have challenged our current understanding and paradigm of site management."

However, these successes and changes also come with challenges. One challenge Glascock highlighted is outreach and engagement of the LM mission.

"I find it to be the most challenging, especially when it's done right. Our engagements with regulators, stakeholders, tribal partners, academia, community alliances, and more take a tremendous amount of time and effort to properly prepare and execute. It takes a lot of social, technical, and emotional capital to meaningfully communicate with interested parties and incorporate them into the decision-making process," Glascock said.

"An engagement is not 'one and done' in our business. If done right, we make it happen early and often and throughout the lifetime of a site. Even more challenging is making sure those you are engaging are the right folks, at the right time, for the circumstances we are facing at a site. The issues we may face at a site could call for a different party to engage or additional engagements with a current party," he added.

Despite the challenges, the site operations director expressed his excitement about the future of the OSO and looks forward to the opportunity to grow and evolve even more.

"We will be handling the tsunami of sites to be transferred to LM over the next few years. I expect to receive 20 more sites from cleanup organizations like the U.S. Army Corps of Engineers and the U.S. Nuclear Regulatory Commission. Cleanup organizations are nearing the end of their lists, with the largest and more severely contaminated work at hand, so these sites will be more complex for LM to manage," Glascock said. "To properly manage these, we will need more site managers and increased support from functional areas, like environmental compliance and real estate."

Glascock also mentioned some of his priorities for the OSO moving forward.

"My goals are a reflection of how I define success, including keeping our people safe and secure." ■

Jay Glascock

Glascock's other priorities:

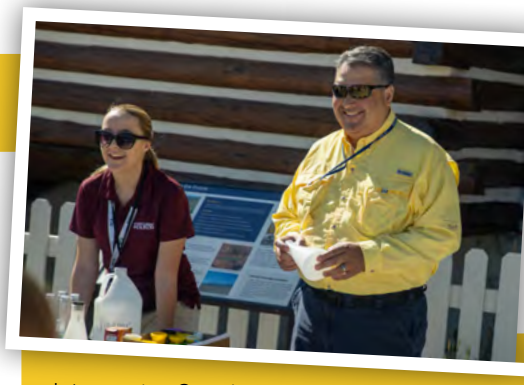
- Exercising due diligence on site transfers by engaging stakeholders and regulatory agencies.
- Thinking, planning, and executing work programmatically.
- Substantially completing defense-related uranium mine campaigns on public, tribal, and private lands.
- Folding National Laboratory Network recommendations, sustainability, emerging contaminants, and climate resilience into site planning.
- Improving communications when managing contracts, working with counterparts, and managing programs, projects, and sites.

"I would define success as being able to safely accomplish our operational activities in such a way that we sustain the protectiveness of the environmental remedies put in place during remediation and continue the LM mission."

–JAY GLASCOCK

LM's Interpretive Centers Provide Valuable Information and STEM Programming to Communities

ATOMIC LEGACY CABIN



Interpretive Specialist and Visitor Services Coordinator Ashton Peterhans and LM Director Carmelo Melendez at the Atomic Legacy Cabin.

The Atomic Legacy Cabin in Grand Junction, Colorado, was once the epicenter of the nationwide search for uranium that was started by the Manhattan Project and later escalated during the Cold War. Now an interpretive center, the cabin offers visitors a look at the history of uranium on the Colorado Plateau as well as information about LM's mission of protecting human health and the environment.

The cabin opened in 2019 with a ribbon-cutting ceremony. The historic nature of the site, which is listed on the National Register of Historic Places, was a consistent theme during the event.

Since opening, the cabin has been building relationships with local educators and creating robust programs for all age groups that focus on science, technology, engineering, and math concepts related to LM's site work, as well as history programs that aim to preserve the legacy of the cabin's contribution to national defense.

In 1943, U.S. Army Corps of Engineers Second Lieutenant Philip C. Leahy was charged with procuring as much uranium as possible for the Manhattan Project's uranium procurement section. He purchased 43 acres of isolated land for the government, which included the cabin that served as Leahy's office. The land was adjacent to the Gunnison River and near an existing railroad spur, making it the perfect location for a covert project.

This kicked off 80 years of continuous government work, including U.S. Atomic Energy Commission projects,

remediation of the Climax mill and vicinity sites, and the current work LM conducts to monitor its sites to protect human health and the environment.

"In addition to being stewards of the environment, LM strives to be stewards of history — and this is history coming to life," said Peter O'Konski, then-deputy director for the DOE Office of Legacy Management. ■

ALC staff with local Boy Scout Troop program in 2019.

The **Atomic Legacy Cabin** is open to the public on Tuesdays from 9 a.m. to noon, Wednesdays from 10 a.m. to 1 p.m., and on Thursdays from 1 p.m. to 4 p.m. Tours are available upon request. The interpretive center is closed on federal holidays. Email AtomicLegacyCabin@lm.doe.gov for more information.

U.S. DEPARTMENT OF ENERGY
ATOMIC LEGACY CABIN

energy.gov/lm/atomic-legacy-cabin

FERNALD PRESERVE

The award-winning Fernald Preserve, located near Hamilton, Ohio, has a visitors center that is the focal point of public activity at the site.

"The Fernald Preserve is an amazing place. I see how this site has grown, changed, and healed itself, and we did it all together," said Lisa Crawford, a former Fernald Citizens Advisory Board member with Fernald Residents for Environmental Safety and Health. "The Fernald Preserve has taken us back to our roots and has become a huge community asset that carries on the legacy of Fernald."

Completed in August 2008, the visitors center was once a warehouse used during the environmental cleanup that was redesigned in cooperation with the University of Cincinnati's College of Design, Architecture, Art, and Planning. Exhibits in the visitors center depict the diverse history of the Fernald site, including its geological history and the indigenous American Indians and Euro-American settlers who lived on the land, while also focusing on the Cold War uranium metals production industry, the subsequent environmental cleanup, and today's ongoing legacy management.

The visitors center was one of the first buildings in Ohio to receive platinum certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design rating system, the nationally accepted standard for the design, construction, and operation of high-performance green buildings. Advantages to LEED-

Sunset at Fernald Preserve Visitors Center. Photo by Luree Ketcham.

certified buildings are lower operating and maintenance costs, a high degree of energy and water efficiency, and a more healthy and safe working environment. Environmentally friendly features of the building include a ground-source heating and cooling system and a zero-discharge biowetland where water, plants, microorganisms, and the environment interact to treat the building's wastewater.

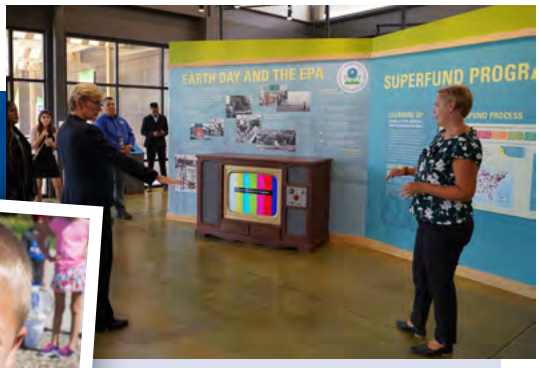
Short, flat trails around the Fernald Preserve Visitors Center offer views of expansive natural areas, including the former production area as well as several memorials honoring the contributions made by Fernald site employees during the Cold War and subsequent environmental cleanup. Longer trails with uneven terrain begin at the visitors center and extend toward the northern and southern boundaries of the site. Several overlooks, a wildlife viewing blind, and a boardwalk through a wetland provide additional opportunities to observe a diverse array of plants, birds, and other wildlife. ■

The **Fernald Preserve Visitors Center** is free and open to all. Walk-in visitors are welcome during normal open hours, and scheduled programs are available daily, evenings, and weekends. Hours of operation are Wednesday through Saturday 9 a.m. to 5 p.m. and Sunday noon to 5 p.m. Closed federal holidays. For more information please visit the website.

Fernald Preserve

energy.gov/lm/fernald-preserve-ohio-site

WELDON SPRING



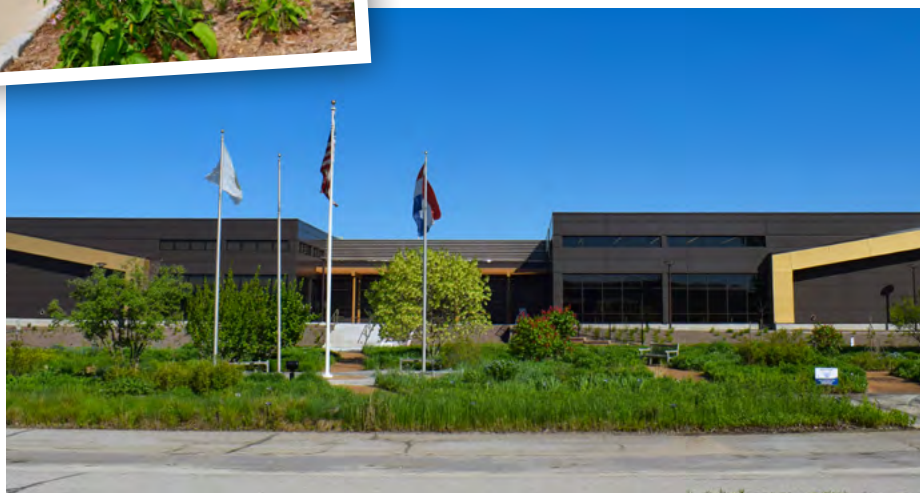
Discovery, history, nature, and education await at the U.S. Department of Energy Office of Legacy Management's Weldon Spring Site located in St. Charles County, about 30 miles west of St. Louis.

The Weldon Spring Site represents DOE's commitment to environmental stewardship, community, and education. The site is open to the public and is an excellent example of beneficial reuse of a former World War II explosives manufacturing and Cold War uranium metals processing facility. The site's interpretive center first opened in 2002 and communicates site history, cleanup activities, and current conditions. The facility was designed to honor the work performed at the Weldon Spring Site, highlight the workers who provided their service to the nation, and recognize the sacrifices of displaced families and others who were impacted.

The Weldon Spring Site Interpretive Center has served about 370,000 visitors, meeting room users, school students programs, and community event contacts since 2002. The site's new exhibit hall features large, panoramic views of the Howell Prairie, which is home to more than 80 different species of native plants — creating a habitat for many songbirds, insects and pollinators, deer, coyotes, hawks, and more.

"The interpretive center allows DOE to provide educational programs, tours, research opportunities, and meeting rooms for public use. The surrounding gardens and prairie trails are also open to the public to explore," said Rebecca Roberts, LM's site manager.

"What a wonderful moment," said Carmelo Melendez, LM director. "When you see students' eyes light up — that's what it's all about." ■



The **Weldon Spring Site Interpretive Center** offers K-12 and college-level school programming that meets Missouri Department of Elementary and Secondary Education standards. Several site programs also meet the Next Generation Science Standards. Field trips and outreach programming occurs almost daily during the school year.

Hours of operation are Monday through Friday 9 a.m. to 5 p.m. and Saturday and Sunday 10 a.m. to 4 p.m. Closed on federal holidays, New Year's Day, Easter, and Christmas Day.

WELDON SPRING SITE
A Legacy of Service

energy.gov/lm/weldon-spring-site-missouri

LM High Performance Continues

As number of sites has grown in 20 years, so has scope and depth of work

Shortly after the U.S. Department of Energy Office of Legacy Management was established in 2003, its leaders set a course to accomplish its mission to fulfill post-closure responsibilities and ensure the protection of human health and the environment.

To ensure the proper course was charted, LM established a structure outlined by the Office of Management and Budget for high-performing organizations. OMB later identified LM as an HPO in 2007.

A lot has changed in LM's 20-year history, including growth from 33 sites to 102 sites, but one thing has not changed — LM still aims to meet the high standards of an HPO.

"Although the number of sites LM is responsible for is important, focusing on only the number ignores the significant work LM does," LM Program Director Carmelo Melendez said. "The work that we perform as an organization is significant in scope and depth."

After LM's initial designation in 2007, HPO plans followed in 2012 and 2017. Building upon that success, LM developed HPO plan strategies, goals, and metrics through 2025 through internal and external evaluations to improve the efficiency and effectiveness of LM programs.

Today, LM is responsible for 102 sites in the United States and the territory of Puerto Rico. LM conducts long-term surveillance and maintenance at sites where nuclear waste has been disposed, where residual contamination remains, or where passive or active treatment of groundwater contaminated by radionuclides or other contaminants of concern is being conducted. The major LTS&M objective is to make certain that legacy sites remain protective of human health and the environment.

LM's proposed HPO plan, goals, and indicators show how its mission has grown in scope and depth. Some of the management excellence goals were also part of previous HPO plans because of their continued importance — goals such as maintaining a safety record better than the DOE average and continuing to strive to be a diverse and inclusive organization.

THE FOLLOWING ARE SOME PERFORMANCE GOALS:

- Reduce baseline costs to operate, monitor, and maintain environmental remedies.
- Validate site remedies' scientific and engineering soundness and identify opportunities to reduce risks and costs by performing five-year and other periodic independent program reviews (done by parties not performing the work).
- Complete the inventory of defense-related uranium mines on public land.
- Evaluate and track potential opportunities to increase the number of DOE sites that include beneficial reuse.
- Transfer excess federal real and personal property to other agencies, organizations, and individuals to use.
- Manage the Uranium Leasing Program so there are no environmental compliance violations on the lease tracts.
- Increase satisfaction levels with LM communication based on overall stakeholder survey results.
- Use more effective solutions at reduced costs through partnerships with other governments.

ADDITIONAL PERFORMANCE GOALS:

- Complete the milestones identified in the LM Human Capital Management Plan.
- Validate that LM is one of the best organizations to work for in DOE and the federal government based on U.S. Office of Personnel Management Federal Employee Viewpoint Survey results.
- Prioritize site management funding, resource allocation, and science and technology investments based on well-defined risk management practices implementation.
- Confirm LM programs safely and efficiently achieve results and are compliant with oversight results.

LM continues to report on its objectives and actions in the same way and on the same schedule. The annual Post Competition Accountability Report is a planning tool that helps LM identify areas to improve performance and possibly change strategies to reach HPO targets. It's also an important record of the status of major program and project milestones.

"LM worked hard to establish an organization of excellence," Melendez said. "It is our intention to uphold the high standard that was set by our predecessors and to continue sound practices that lead to organizational excellence." ■

HISTORICAL & DOE LM TIMELINE

The U.S. Department of Energy Office of Legacy Management's work began in 2003, but its backstory started many decades before with events that shaped world history. This timeline shows some of the milestones of World War II, the Cold War, and the Nuclear Age, which preceded DOE's environmental cleanup program and LM's efforts that continue today to protect human health and the environment.

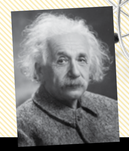
TWENTY OFFICE OF LEGACY MANAGEMENT Commitment to Stewardship YEARS

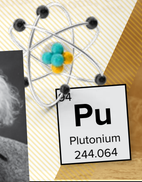
TWENTY YEARS

HISTORICAL TIMELINE

DOE LM TIMELINE

1939: Albert Einstein and Leo Szilard write a letter to Franklin D. Roosevelt, encouraging the president to explore atomic energy.





1941: Japan bombs Pearl Harbor.

1942: The Army Corps of Engineers establishes the Manhattan Engineer District to develop and build the atomic bomb.

1945: Germany surrenders.

1945: The Trinity test, the world's first nuclear detonation, takes place in Alamogordo, New Mexico.

1945: The U.S. drops Little Boy, a gun model uranium bomb, on Hiroshima, Japan. Three days later, it drops an implosion model plutonium bomb, called Fat Man, on Nagasaki, Japan.

1945: World War II ends following Japanese surrender.

1946: Former British Prime Minister Winston Churchill delivers the "Iron Curtain" speech, warning of aggression from the Soviet Union.

1947: The U.S. Atomic Energy Commission creates the domestic uranium procurement program, which causes a boom in uranium mining.

1954: President Dwight D. Eisenhower signs the Atomic Energy Act of 1954, opening the way for the development of a civilian nuclear power program.

1957: The Soviet Union successfully launches Sputnik I. The Space Age begins and propels the U.S. government into action, leading to the formation of NASA.

1961: Soviet Pilot Yuri Gregarin becomes the first human to journey into outer space and complete an orbit of the Earth.

1962: Reconnaissance reveals Soviet missiles in Cuba and the Cuban Missile Crisis begins. The 13-day confrontation between the U.S. and Soviet Union almost leads to a nuclear exchange.

1963: President John F. Kennedy and the leaders of 70 other nations sign the Limited Nuclear Test Ban Treaty, which prohibits all nuclear test explosions.

1969: The U.S. stockpile of nuclear warheads peaks at 31,255 warheads.

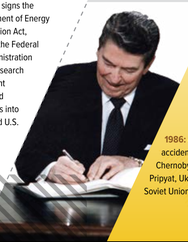
1969: During the Apollo 11 mission, American astronauts Neil Armstrong and Edwin "Buzz" Aldrin become the first humans to walk on the lunar surface.

1969: President Lyndon B. Johnson signs the National Environmental Policy Act.

1974: President Gerald Ford signs the Energy Reorganization Act of 1974, abolishing the U.S. Atomic Energy Commission and establishing the Energy Research and Development Administration and U.S. Nuclear Regulatory Commission.

1977: President Jimmy Carter signs the Department of Energy Organization Act, abolishing the Federal Energy Administration and Energy Research and Development Administration and merging their efforts into the newly established U.S. Department of Energy.

1983: President Ronald Reagan signs the Nuclear Waste Policy Act of 1982, the nation's first comprehensive nuclear waste legislation.



1986: A major nuclear accident occurs at Chernobyl Reactor #4 near Pripyat, Ukraine, in the Soviet Union.

1989: The Berlin Wall falls.

1989: Sixth Secretary of Energy Admiral James Watkins approves the establishment of the Office of Environmental Restoration and Waste Management. (Later renamed the Office of Environmental Management.)

1992: President Clinton signs Executive Order 12898 – "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations."

1992: The U.S conducts its last underground nuclear weapons test. Congress imposes a temporary moratorium on nuclear weapons testing.

1993: Seventh Secretary of Energy Hazel R. O'Leary announces an "openness" initiative to lift the veil of secrecy from past nuclear activities.

1998: DOE's Uranium Mill Tailings Remedial Action Project comes to a successful end with the remediation of the 22nd and final site at Maybell, Colorado.

2000: DOE activates the National Nuclear Security Administration, meeting the statutory deadline established by the fiscal year 2000 defense authorization act.

2003: The U.S. Department of Energy creates the Office of Legacy Management, employing 81 federal staff to provide long-term surveillance and maintenance at 33 sites.

2003: Michael Owen is named first director of LM.

2003: Assistant Secretary of Energy for Environmental Management Jessie Roberson testifies before the Senate about the DOE's vision to hand over the long-term stewardship to the soon-to-be-created Office of Legacy Management.

2004: Energy Secretary Spencer Abraham designated the Office of Legacy Management responsible for the Environmental Justice Program, led by Melinda Downing.

2005: LM implements System Operation and Analysis at Remote Sites (SOARS) telemetry data and installs data loggers at several remote sites to monitor groundwater and record results electronically.

2007: LM supports creation of the first Five-Year Plan for addressing imminent risks on the Navajo Nation.

2007: LM analyzes contractor benefits at LM sites and Office of Environmental Management closure sites.

2007: The LM Office of Management and Budget is designated as the second high-performing organization in the federal government.

2007: LM places 1,527 acres into reuse at the Shirley Basin South, Wyoming, Disposal Site for livestock grazing and assists the Office of Environmental Management in the transfer of nearly 4,000 acres of the Rocky Flats Site, Colorado, to the U.S. Department of the Interior for use as a national wildlife refuge.

2008: The Fernald Preserve Visitors Center opens.

2008: LM program budget more than triples to align with additional roles and responsibilities.

2010: David Geiser is named the second director of LM.

2010: The LM Business Center in Morgantown, West Virginia, a National Archives and Records Administration-certified facility with 150,000 cubic feet of storage capacity, opens.

2011: LM funds pensions and post-retirement medical and life insurance benefits for more than 12,000 former contractor workers and their spouses.

2012: LM digitizes more than 400,000 X-ray records to ensure long-term preservation.

2012: Finalized agreement with the Northern Arapaho Tribe to ensure safe drinking water at the Riverton, Wyoming, Processing Site.

2014: LM adapts work processes to more effectively handle increased Energy Employees Occupational Illness Compensation Program Act requests due to changes in eligibility guidelines.

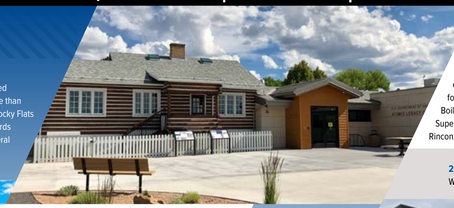
2016: LM accepts responsibility for coordinating DOE's role in the Manhattan Project National Historical Park, a partnership park with the U.S. National Park Service.

2016: Carmelo Melendez is named third director of LM.

2016: LM receives the Presidential Award for Sustainability for the Rocky Flats Site, Colorado.

2017: LM celebrates the opening of the 130-acre Las Colonias Park by the city of Grand Junction, Colorado, on a former uranium mill site.

2019: Completed transferring more than 19,000 boxes of Rocky Flats Site, Colorado, records from the Denver Federal Records Center to the LMBC.



2019: The Atomic Legacy Cabin, a new interpretive center located at the Grand Junction, Colorado, Site that was once the epicenter of the nationwide search for uranium started opens.

2020: Released the 2020-2025 Strategic Plan, which charts LM's course over the next five years.

2021: Recognized by the U.S. Government Accountability Office in a report that identified LM's risk-based decision-making as an example for other agencies to follow.

2022: LM completes a nine-month record-recovery project to digitize historical design, construction, and operations documents for the decommissioned Boiling Nuclear Superheater reactor in Rincon, Puerto Rico.

2022: A new interpretive center at the Weldon Spring Site, Missouri, opens.

2023: As of 2023, DOE provides health and life insurance benefits for more than 9,200 former DOE workers.

2023: LM conducts its 20th anniversary campaign, which includes a four-part podcast series, a celebration event, profiles of former and current employees, a video series of mission goals, and more.

1939 1941 1942 1945 1946 1954 1983 1986 1989 1992 1993 1998

2003 2004 2005 2007 2008 2010 2017 2019 2020 2021 2022 2023


TWENTY
OFFICE OF LEGACY MANAGEMENT
Commitment to Stewardship
YEARS

LM Relies On Collaboration to Fulfill Its Mission

Strong relationships are key to successful long-term stewardship

Protecting human health and the environment of U.S. Department of Energy Office of Legacy Management communities is a core mission, but LM employees admit they couldn't do it alone. With more than 100 sites stretching from Alaska to Puerto Rico, to effectively work with a wide range of interested parties from regulators to the media to the public to elementary school teachers, it takes a strong cadre of dedicated people.

"In our first two decades, LM has relied on strong relationships with our partners to fulfill our mission," said LM Director Carmelo Melendez. "As we take on more sites and continuously improve our outreach, the importance of developing and maintaining our partner relationships will only continue to grow."

"When LM sites are on or near tribal lands, site managers work closely with Native American and Native Alaskan tribes," said Tribal Outreach Coordinator Shawn Montgomery. "LM is responsible for long-term stewardship of former uranium mill sites and former testing sites on or near the Navajo Nation, the Spokane Indian Reservation in Washington, and the Wind River Reservation and Northern Arapahoe Reservation in Wyoming, and the Qawalangin Tribe of Unalaska. We routinely collaborate with tribal partners for site inspections, environmental monitoring, document review, natural resources management, and community outreach."

LM is responsible for making sure the remedies in place at the more than 100 sites it manages continue to work as designed, and it does so with the oversight of state and federal regulatory partners. For instance, the Colorado Department of Public Health and Environment is a signatory to the Rocky Flats Legacy Management Agreement that established the regulatory framework for the final remedy at the Rocky Flats Site, Colorado.

The Ohio Environmental Protection Agency enforces environmental laws, regulations, and legal agreements and oversees work at the Mound Site and Fernald Preserve Site. And at the Weldon Spring Site near St. Louis, Missouri, the Missouri Department of Natural Resources has a regulatory oversight role, provides technical reviews of DOE documents, and joins site inspections.

"The work of our state regulators is crucial," said LM Environment Team 2 Supervisor Cliff Carpenter. "It's important communities know that their state's environmental experts are verifying the maintenance and safety of our sites."

LM also benefits from the oversight of federal regulators. The U.S. Environmental Protection Agency oversees its Comprehensive Environmental Response, Compensation, and Liability Act, or "Superfund," sites, such as the

U.S. Army Corps of Engineers Philadelphia District personnel guide a tour of the DuPont Deepwater Site in New Jersey during a visit to the North Atlantic District in July 2023. USACE is developing cutting-edge sensing and mapping technologies to locate and remove Manhattan Project contamination from the site.

Laboratory for Energy-Related Health Research, California, Site in Davis, California. The U.S. Nuclear Regulatory Commission provides oversight for LM's Uranium Mill Tailings Radiation Control Act sites, such as the Edgemont, South Dakota, Disposal Site.

"As the regulator of our UMTRCA sites, the NRC has always been there for us," said LM Environment Team 1 Supervisor Paul Kerl. "Their commitment and expertise have proven invaluable."

However, LM counts on federal partners for more than regulatory oversight. LM participates in the Abandoned Uranium Mines Working Group, which is a consortium of federal agencies working together to address human health, safety, and environmental challenges posed by the nation's abandoned uranium mines.

The U.S. Army Corps of Engineers is another important federal partner. USACE not only collaborates on the Formerly Utilized Sites Remedial Action Program, but they also share project, engineering, and construction management and emergency response resources and services nationwide through a memorandum of agreement and interagency agreements.

At the local level, LM communities have provided indispensable support to LM. For example, the Rocky Flats Stewardship Council has provided local engagement in Rocky Flats Site activities about long-term stewardship of residual contamination and refuge management since 2006. RFSC includes elected officials from counties and cities surrounding the Rocky Flats Site, as well as representatives from community organizations.

Similarly, the Fernald Community Alliance works with LM to help promote education and long-term stewardship of the site, which is important for telling Fernald's story and preserving the history of the land, people, culture, and the Cold War.

"As site manager for the Fernald Preserve, I've relied on the commitment and key insights of the FCA members," said LM Site Manager Brian Zimmerman. "I look forward to our regular meetings and getting their feedback about our activities."

At the international level, LM's partners have given a broader perspective on long-term stewardship and increased our knowledge. For instance, LM collaborates with the International Atomic Energy Agency and its "member state" countries to develop programs to remediate and provide post-closure care of contaminated sites around the world connected mainly to Cold War uranium production. Headquartered in Vienna, Austria, the IAEA is a branch of the United Nations. LM also engages with the Nuclear Energy Agency. NEA is an intergovernmental agency that facilitates cooperation among countries with advanced nuclear technology infrastructures to seek excellence in nuclear safety, technology, science, environment, and law.

"Our international partners bring fresh perspectives to our LTS work," said LM Technical Director Tania Smith Taylor. "As we seek to continuously improve, our international partners have provided a wide array of insights."

Over the years, LM also has had the good fortune of building strong partners throughout DOE. LM participates in the DOE National Long-Term Stewardship Working Group with the Office of Environmental Management and the National Nuclear Security Administration. DOE set up LTSWG to address national and crosscutting site-level long-term stewardship activities and issues. In addition, EM and LM jointly sponsor the Network of

LM Applied Studies and Technology Lead Chris Jarchow (far left), along with LM Site Managers Ken Kreie (center) and Mary Young (right), talk with a student at the 2023 American Indian Science and Engineering Society National Conference in Spokane, Washington, in October.

National Laboratories for Environmental Management and Stewardship. NNLEMS advances the effectiveness of scientific and technical expertise in the DOE National Laboratory Complex toward meeting EM's legacy nuclear waste cleanup mission objectives and LM's long-term surveillance and maintenance mission objectives.

LM's mission to form long-term partnerships with educational institutions has also proven critical in informing and engaging new generations of stakeholders. LM partners with the Pre-College University under LM's Environmental Justice Program to host interns through the Mentorship for Environmental Scholars Program. The MES Program is a paid 10-week summer internship that introduces underrepresented college students to research opportunities in environmental science, environmental justice, and environmental policy. LM also partners with Florida International University in the DOE-FIU Science and Technology Workforce Development Program, which provides a pipeline of minority engineers specifically trained and mentored to help address LM's research goals.

LM recognizes the need to engage students with our work well before college. Through the STEM with LM program, LM brings science, technology, engineering, and math education to life. STEM with LM provides materials, resources, and training opportunities that support STEM education and outreach in our communities.

Established November 10, 2015, the Manhattan Project National Historical Park (MAPR) is managed through a collaborative partnership by the U.S. National Park Service and the U.S. Department of Energy to preserve, interpret, and facilitate access to key historical resources associated with the Manhattan Project.

DOE performs management, operations, maintenance, and preservation activities for the historic Manhattan Project sites currently under its jurisdiction. NPS provides administration, interpretation, and education at the three park sites, and supplies technical assistance in support of resource preservation. The two agencies collaborate in identifying and developing partnership arrangements and other strategies to tell the complete story of the Manhattan Project and its legacy. In November 2016, DOE made LM responsible for coordinating among the DOE program offices that are implementing the MAPR mission.

"LM is only as strong as our partnerships," said LM Deputy Director Scott Whiteford. "We are committed to ensuring the future protection of human health and the environment, and we are grateful to the contributions of our many partners in ensuring that we meet our mission." ■

Rocky Flats Stewardship Council board members visit a Point of Evaluation monitoring location at the site in June 2023.

Navajo-Hopi-DOE triannual meeting attendees toured Animas City Park in Durango, Colorado, in March 2023. After cleanup, the city of Durango transitioned the former uranium processing site into a public park and recreation area.

LM Site Manager Charlee Boger (left) points out Durita, Colorado, Disposal Site features to LM Director Carmelo Melendez (right) in August 2023. Melendez and LM staff joined U.S. Nuclear Regulatory Commission and U.S. Environmental Protection Agency officials on a remediated sites tour in southwestern Colorado.

LM Investing in The Future Through Its STEM Activities

Office of Legacy Management launched STEM with LM program on 50th anniversary of Earth Day in 2020

The U.S. Department of Energy Office of Legacy Management is committed to supporting science, technology, engineering, and mathematics education programs across the United States and providing educational programs that equip students of all ages with the skills and knowledge needed to help resolve the nation's future energy and security challenges.

LM recognizes the need to have an educated, inclusive, and diverse workforce that is prepared to continue the management and long-term stewardship responsibilities at its legacy sites to ensure the protection of human health and the environment for future generations.

To support this nationwide effort, LM launched the STEM with LM program on the 50th anniversary of Earth Day in April 2020. STEM with LM brings to life the advancements and events of the nuclear age and the subsequent cleanup and ecological transformations of the sites where they happened. Part of this initiative included the unveiling of a new webpage that offers readily available, free, curriculum-based education programs and materials that are interdisciplinary, fun, and hands-on to teach students real-world applications of STEM concepts.

"STEM with LM's mission statement is interconnected with LM's own mission to protect human health and the environment because we are looking to educate the next generation of great scientists, engineers, and science professionals," said LM Education, Communication, History, and Outreach Supervisor David Von Behren. "This work educates young people and simultaneously begins to show them pathways in the fields of science."

Building the STEM with LM program has been a longtime vision of LM's director, Carmelo Melendez. His conceptual inspiration helped create the program that provides free, high-quality STEM education, supplies, and activities to all students regardless of location, race, or socioeconomic status. Additionally, LM federal staff are encouraged to get involved in this important mission by supporting at least 20 hours of STEM programming every year.

Over the last four years, STEM with LM has supported STEM programming across the nation. Through this effort, the STEM with LM program has built longstanding partnerships with several groups, including tribal partners on the Navajo Nation. This has been accomplished through consistent support of STEM-sation events and by cosponsoring the first-ever Miss Navajo Nation STEM event on April 13, 2023, which more than 600 high school students participated in.

"STEM with LM is paving the way for continued partnership and outreach across the United States," said Shawn Montgomery, LM communications specialist and STEM with LM coordinator. "Our team strives to expand our reach to additional tribal nations and underserved communities through supporting STEM events as well as equipping teachers with resources, supplies, and even STEM kits that can inspire the next generation of STEM professionals."

The STEM with LM webpage offers a variety of online activities and resources for families, students, and teachers. With more than 20 activities covering a variety of STEM topics, including groundwater, birding, Earth Day, and the science of color, there is something for everyone.

LEFT: LM Site Manager Mary Young shows a cast of an animal footprint while discussing ecology and environmental science at Tope Elementary School in Grand Junction, Colorado, during a 2023 STEM with LM program.

RIGHT: Activities such as the Pool Noodle Rocket allow students to explore STEM principles in way that's fun, engaging, and hands-on.

Recent graduates can explore internship and mentorship opportunities with the U.S. Department of Energy where they can be a part of a cooperative-learning environment and see STEM in action on the job. The STEM with LM team is also working hard to continue to develop and add new activities and lesson plans that meet curriculum standards for teachers. Find resources for students, families, and teachers at www.energy.gov/lm/stem-lm..

The STEM with LM program also works alongside LM's three interpretive centers: the Atomic Legacy Cabin in Grand Junction, Colorado; Weldon Spring Site Interpretive Center near St. Charles, Missouri; and Fernald Preserve Visitors Center near Hamilton, Ohio. LM's interpretive centers are open to the public and serve the surrounding communities by providing valuable information about each site's history, cleanup, and LM's long-term stewardship.

The interpretive centers also offer educational programming in STEM and history topics both on- and off-site. In Grand Junction, Colorado, STEM with LM and the Atomic Legacy Cabin have worked closely with the local school district to support career fairs, Lego League, Solar Car tournaments, and many other STEM events, big and small.

The STEM with LM program continues to be an LM mission-driven effort that provides opportunities to partners, audiences, and communities that LM serves. For more information, visit www.energy.gov/lm/stem-lm. ■

Grassroots Initiatives Develop into Environmental Justice Movement

LM was designated home office of the DOE Environmental Justice program in FY 2005

Medical University of South Carolina's Community Leaders Institute "Made for TV Dialogue" with CNN's John King.

In 1982, the state of North Carolina decided to locate a hazardous waste landfill in Warren County, a small, predominately African American community. This landfill would accept polychlorinated biphenyl-contaminated soil that resulted from illegal dumping of toxic waste along roadways.

In response, the National Association for the Advancement of Colored People and others staged a massive protest, and more than 500 protesters were arrested. While the Warren County protest failed to prevent the siting of the disposal facility, it did bring national attention to the Environmental Justice movement, which was galvanizing communities across the country seeking social justice and environmental protection.

Following the Warren County protest, people in poor communities created groups to fight environmental burdens that they claimed resulted from being targeted by industry for activities that threatened the environment (e.g., the use, storage, and disposal of toxic chemicals that produced high rates of environmental illness).

The Warren County protest and the emerging EJ movement served as the impetus for several studies designed to measure the connection between race and hazardous-waste siting decisions. The General Accounting Office reviewed the hazardous-waste siting decisions in Region IV for the U.S. Environmental Protection Agency. This region includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee — states with a high proportion of minority residents. GAO found that there were four hazardous waste landfills in Region IV. African Americans made up most of the population in three of the communities where landfills were located, and at least 26% of the population in all four communities had incomes below the poverty level.

Also springing from the Warren County protest was *Toxic Wastes and Race*, a 1987 United Church of Christ Commission for Racial Justice study that showed community racial makeup was the most significant factor in siting hazardous waste facilities and that three in five African Americans and Hispanics lived in community housing near toxic waste sites.

Another key event in the history of EJ is the First National People of Color Environmental Leadership Summit in 1991. Representatives from hundreds of communities across the country came together in Washington, D.C., to focus attention on the national problem of targeting minority communities for hazardous waste treatment, storage, and disposal facilities.

This summit was the first attempt to bring communities together to discuss their common interests and to seek a common solution.

One of the outcomes of the summit was a consensus document called *The Principles of Environmental Justice*, which laid out a process for maintaining communication and growing the new EJ movement as a national matter.

In 1992, EJ activities around the country led to a call by President George H.W. Bush, to establish an Environmental Equity Work Group, headed by then EPA Administrator William Reilly, to initiate federally sponsored meetings with community

Participants of the Teaching Radiation, Energy, and Technology Workshop.

leaders to seek EJ solutions. Then, in 1994, President William J. Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This was the beginning of efforts by federal agencies to create a policy framework and strategy for addressing unequal environmental impacts. Historically, minorities have been absent from the rank-and-file membership of mainstream environmental associations, and these organizations have not often addressed EJ issues.

In the 1990s, some established environmental organizations, such as Sierra Club, the Audubon Society, Friends of the Earth, and Greenpeace, began to recruit minority members to serve in staff and decision-making positions. A few, including Sierra Club and Greenpeace, have participated in the EJ struggle by filing briefs or providing information and organizational resources. Since the 1990s, an international EJ movement has been flourishing, having emerged out of various struggles, events, and social movements worldwide.

In the 1990s, the U.S. Department of Energy Office of Environmental Management developed the Center for Environmental Management Information. The center served as a citizen call-in resource for EM and was the first of its kind. It offered citizens an opportunity to receive answers to EM-related questions, request documents, and visit an on-site library.

> *As new challenges to our society and environment evolve, EJ offers a vision for advancing from our system of the "haves" and "have nots" to a new sustainable and fair society and economy. Environmental Justice's challenge is to build a strategic plan with actions to develop new opportunities in EJ, climate justice, and community development. DOE and LM are committed to this task.*
>
> **—MELINDA DOWNING, DOE EJ PROGRAM MANAGER**

The center's development coincided with emerging EJ needs. EJ initiatives arose from an increased awareness of the disproportionately high impacts of environmental pollution on economically and politically disadvantaged communities. Citizens were becoming aware of issues such as social, economic, and political marginalization of low-income and minority populations. EJ was elevated when President Clinton signed EO 12898 in 1994. EO 12898 directed federal agencies to develop strategies to address the disproportionately high and adverse health and environmental effects of their programs on low-income and minority populations.

To carry out the goals and objectives of EO 12898 and the Department's EJ strategy, DOE selected Melinda Downing as its EJ program manager, and she continues in this position.

In FY 2005, DOE's EJ program was transferred to the Office of Legacy Management. Although the program is under LM's umbrella, it is a DOE-wide initiative. The program supports policies that provide benefits to

Supporting Executive Orders and Memorandum of Understanding

- **Executive Order 12898**, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations."
- **"Memorandum of Understanding on Environmental Justice,"** signed by 17 federal agencies.
- **Executive Order 13985,** "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government."
- **Executive Order 14008**, "Tackling the Climate Crisis at Home and Abroad."
- **Executive Order 14052**, "Implementation of the Infrastructure Investment and Jobs Act."
- **Executive Order 14057**, "Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability."
- **Executive Order 14091,** "Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government."
- **Executive Order 14096,** "Revitalizing Our Nation's Commitment to Environmental Justice for All."

These EOs not only affirm the federal government's commitment to identify and address EJ concerns, but they also offer new principles, commitments, and guidance, especially in the climate change and racial equity domains.

adversely affected communities. The goal of EJ is that all people, regardless of race, ethnicity, gender, or income, have the right to a clean and healthy environment. The DOE EJ program seeks three outcomes:

- Fair and equal treatment for all.
- Equitable distribution of environmental burdens.
- Meaningful involvement and public participation in decision-making processes.

The EJ program has risen to one of prominence within DOE and throughout LM. Under the leadership of Carmelo Melendez, the director of the Office of Legacy Management, and Downing, LM has worked very hard to strengthen relationships with tribal communities around their sites and diligently seeks to acknowledge, understand, and listen to the wisdom, hurt, and requests from tribal communities that were harmed environmentally by many past actions of the government. LM has made great strides in engaging tribal communities in many ways, such as making on-site decisions and building community relationships. The science, technology, engineering, and mathematics activities within the LM program and its outreach activities have grown phenomenally over the past few years. LM is now providing educational grants to assist academic programs at Tribal Colleges and Universities, as indigenous knowledge is so important to ensuring we care for the environment in a sustainable way.

EJ is a critical aspect of sustainable development, ensuring that all individuals, regardless of their socioeconomic status or background, have equal access to a clean and healthy environment. The DOE EJ program plays a crucial role in addressing environmental inequalities and promoting social equity. DOE's EJ program has served as a model for community involvement, public accountability, and sustainability that can be replicated elsewhere nationally. DOE continues to collaborate with federal, state, local, tribal, and other partners to help overburdened communities proactively address emerging environmental challenges in ways that build long-term sustainability of the programs.

EXAMPLES OF DOE EJ ACTIVITIES

NATIONAL ENVIRONMENTAL JUSTICE CONFERENCES AND TRAINING PROGRAMS

The conference is held annually and brings together over 500 participants from federal, state, and local government agencies, public and private sector organizations, nonprofits, and academic institutions. This is a three-day thought-provoking session of workshops and panels which engage in discussions of EJ lessons learned and opportunities for addressing issues on EJ and health disparities.

COMMUNITY LEADERS INSTITUTES

Progress requires informed and active leaders. The purpose of this institute is to reinforce this principle and emphasize the unique relationship between environmental protection, human health, environmental justice, and economic development as an essential part of community development. The CLIs are conducted in partnership between the Medical University of South Carolina and the EJ program as a resource to address EJ issues. As a follow-up to the CLI, a Technical Assistance Workshop is also conducted. TAWs emphasize essential "how-to" skills needed for preparing and managing a "good" grant application.

TEACHING RADIATION, ENERGY, AND TECHNOLOGY
TREAT workshops are a partnership between the DOE Savannah River Site in Aiken, South Carolina, and Savannah State University in Georgia. Participants include teachers, students, community representatives, and federal, state, and local governments. The goal of the workshop is to educate kindergarten through 12th grade teachers, students, and members of the community who live near the SRS about radiation, sources of radiation, radioactive waste management, the effects of radiation on environmental health, and the negative human health impacts of environmental radiation exposures.

COMMUNITY CAPACITY BUILDING THROUGH TECHNOLOGY
This initiative supports the Department in its effort to build community capacity for meaningful participation in DOE and federal activities. It creates community technology centers and provides technical assistance to underserved communities.

DOE WEATHERIZATION ASSISTANCE PROGRAM
WAP reduces energy costs for low-income households by increasing the energy efficiency of their homes while ensuring their health and safety. The program supports 8,500 jobs and provides weatherization services to approximately 35,000 homes every year using DOE funds.

ALLEN UNIVERSITY ENVIRONMENTAL JUSTICE INSTITUTE
DOE and Allen University established AUEJI to work with EJ communities to promote youth development and to attract and mentor students toward STEM disciplines to build a sustainable pipeline for training, education, and employment. AUEJI is a community-sustainable resource center for rural and economically challenged minorities and low-income populations near the DOE Savannah River Site.

MENTORSHIP FOR ENVIRONMENTAL SCHOLARS PROGRAM
The MES Program is a 10-week paid summer internship that introduces underrepresented college students to research opportunities in the areas of environmental science, environmental justice, and environmental policy. The MES Program actively recruits qualified undergraduates from Historically Black Colleges, Tribal Colleges and Universities, Hispanic-Serving Institutions, and other minority-serving institutions for extensive training that will direct them toward gainful employment in various research and management positions within the U.S. Department of Energy.

DOE, through LM's commitment, will continue to advance EJ in its programs, policies, and activities by doing the following:

1) Continue ongoing DOE EJ activities – CLIs, TAWs, TREAT, MES, and Capacity Building Through Technology – among other current activities.
2) Conduct an annual EJ assessment of program and activities.
3) Provide workshops and training efforts.
4) Continue as representative to the White House EJ Interagency Council.
5) Provide an annual EJ Implementation Progress Report.
6) Continue to make historic funding investments in DOE's EJ efforts via the Inflation Reduction Act and the Bipartisan Infrastructure Law.
7) Update in-person and virtual DOE EJ and tribal training to reflect new administration EJ executive orders. ■

Mentorship for Environmental Scholars Program participants with Melinda Downing, DOE EJ program manager (first row, second from left).

LM Sets Sights on Expanding Beneficial Reuse Program to All Eligible Sites

LM Beneficial Reuse Asset Manager Diana Kamenel Trettin and LM Support Partner Beneficial Reuse Lead Vail Nazzaro look back at how the program has evolved

The Office of Legacy Management's mission is to fulfill the U.S. Department of Energy's post-closure responsibilities and ensure the future protection of human health and the environment. One way the Office carries out this mission is by sustainably managing and optimizing the use of land and assets by putting legacy sites into beneficial reuse.

In 2017, LM developed a Beneficial Reuse Management Plan that outlines types of reuse, program objectives, criteria, metrics, and plans reuse activities. LM reviews its land holdings periodically, and before a site's transition into its program assesses and identifies its beneficial reuse opportunities. Two to four years before a site transitions, LM begins exploring opportunities to better sustain site closures and provide assets for the surrounding communities in a way that supports LM's mission.

In honor of LM's 20th anniversary in 2023, LM Beneficial Reuse Asset Manager Diana Kamenel Trettin and LM Support Partner Beneficial Reuse Lead Vail Nazzaro took a look back at the history of the program and what its day-to-day looks like.

The program has evolved significantly since Nazzaro joined LMSP, she said.

"The team has worked hard to create a 'toolbox' of resources to increase the success of the program. The toolbox includes resources such as screening checklists and program information sheets. The team has been particularly successful in increasing both internal and external awareness of the beneficial reuse program by updating and increasing program-related media," Nazzaro added.

"In the last year the beneficial reuse team has been able to partner with other members of the LM organization to share resources and complement each other's work in a meaningful way. We now have the ability for site managers for UMTRCA sites to use agreements that originated in DRUM. I see more collaboration coming soon," Kamenel Trettin said.

Forming collaborations and creating checklists are just a part of the day-to-day activities in the program.

"We are continually tracking beneficial reuse activities, screening sites, collaborating with different teams to support planning and execution of beneficial reuse activities occurring across the complex, attending trainings and meetings, and listening to our partners," Kamenel Trettin said. "Planning is the key to our success. We do a lot of talking, but a lot more listening."

After cleanup of the former Climax uranium mill in Grand Junction, Colorado, the area was returned to the community for beneficial reuse. Las Colonias Park features an amphitheater.

The team's work has helped lead LM to success. Over the last decade, LM has been awarded by the U.S. Environmental Protection Agency and other organizations multiple times for its accomplishments in environmental restoration, remediation, conservation, and beneficial reuse at its sites.

"In our scope of work, success is found in expanding the overall number of reuses on LM sites," Kamenel Trettin said. "Ensuring our partners and the public understand our process and are comfortable with the types of beneficial reuse we adopt for each site is crucial. Not every site can be a nature preserve or education center — some are better off being sold to a partner who can reuse it in an overall beneficial way for the community or having the LM and site history story told."

In February, LM won the newly created Secretary's Honor Award for Beneficial Reuse. Over the past five years, LM has been honored with five U.S. Environmental Protection Agency Federal Facility Excellence in Site Reuse Awards.

"It has been a privilege to see LM's hard work and dedication recognized," Nazzaro said.

In addition to those achievements, Kamenel Trettin noted, "I also see an incredible improvement in collaboration and coordination of efforts between staff. This is a huge success in my mind."

These successes aren't without their set of challenges.

"Our team is constantly looking for innovative reuses to give old sites a new purpose. Although it is a challenge, it has not stopped the team from pushing forward and testing the boundaries with new ideas," Nazzaro said.

"Sometimes the most challenging part of a job is opening your imagination to what is possible and sharing your vision in hopes that others see the value. I believe anything in this role is possible," Kamenel Trettin explained.

She and her and team are hoping this vision expands to the additional 16 sites that will transition to LM by 2028. "The program is expected to grow significantly over the next five years. The team has a goal to implement one or more types of reuse to each eligible site as they transition. Our team also wants to increase the number and types of beneficial reuses on existing LM sites by implementing multifaceted reuse whenever possible," Kamenel Trettin added. She described their stretch goal as "reaching and maintaining 100% reuse on available sites." ■

LM Program Directors, 2003 to Present

MIKE OWEN

When the U.S. Department of Energy Office of Legacy Management started in 2003, then-Secretary of Energy Spencer Abraham appointed Michael Owen as LM's first director. Prior to this appointment, Owen served as chief of staff to Congresswoman Marjorie Holt, R-Md., from 1973 to 1985. He also served as assistant secretary of the U.S. Army and principal deputy assistant secretary of installations, logistics, and environment for the Army from 1985 to 1994. Later, Owen took on oversight responsibilities for many programs within the U.S. Army Corps of Engineers, managing the Army base closure and environmental cleanup efforts. Additionally, he played a crucial role in overseeing the Army's demilitarization programs for conventional and chemical munitions.

From 1994 to 1996, Owen served as vice president of Allied Research, where he was responsible for commercial and government markets in environmental remediation processes and services. He then served as president of Governmental Strategies Inc., a lobbying firm specializing in environmental issues. Before taking charge of LM, Owen was the director of DOE Office of Worker and Community Transition.

DAVID GEISER

David Geiser joined LM in 2003 after a distinguished career within DOE's Office of Environmental Management. He graduated from Cornell University with a chemical engineering degree and served in the U.S. Navy as a nuclear-trained officer for eight years on the USS Daniel Webster.

After leaving the Navy, Geiser earned a master's degree in engineering administration from George Washington University. He then joined Science Applications International Corporation. During his three years with SAIC, he spent two years in Paris evaluating European waste management practices.

In 1991, Geiser joined DOE's Office of Environmental Management. There, he served in several roles, including international programs, waste research, planning, technology deployment, and policy development. He began his tenure at LM as the director of the Office of Policy and Site Transition in 2003 and later became deputy director in 2005. After transitioning to acting director in 2009, he was officially named director in 2010.

In 2016, Energy Secretary Ernest Moniz awarded Geiser the Exceptional Service Award.

CARMELO MELENDEZ

Carmelo Melendez is LM's current program director. He leads the department in fulfilling post-closure responsibilities at former defense nuclear sites to protect future human health and the environment.

Throughout his career, Melendez has delivered products and services for planning, engineering, maintenance, construction, housing, community plans and liaison, natural and cultural resources, environmental planning and restoration, contracting, budgeting, and real estate. He served in the Defense, Energy, and State Departments and as a Commander in the U.S. Navy's Civil Engineer Corps. He is a career member of the Senior Executive Service. He was vice chair of the National Academies' Federal Facilities Council and the Office of Management and Budget's real property council.

Melendez holds multiple degrees, including a bachelor's degree in mechanical engineering from the University of Puerto Rico, a Master of Business Administration in human and financial management from NHC, a Master of Engineering in civil and environmental engineering from the University of Florida, and a Doctor of Engineering degree in engineering management from George Washington University. He completed his executive education at Harvard's John F. Kennedy School of Government and Northwestern's Kellogg School of Management.

Additionally, he is a registered professional engineer, certified project management professional, certified facilities manager, a sustainability facilities professional, a certified green rater in Leadership in Environmental and Engineering Design, a member of the Department of Defense Acquisition Professional Community, and has a Level III Defense Acquisition Workforce Improvement Act certification in facilities engineering and contracting. He also holds unlimited Level III contracting officer warrant requests with the Office of Acquisition and Logistics for design, construction, environmental management, real estate, and facilities engineering.

Melendez has led teams recognized with the San Diego Business Journal's Best Places to Work award, the Department of the U.S. Navy's Meritorious Unit Commendation, the Advisory Council on Historic Preservation Chairman's Award in Historic Preservation, the Department of the Navy's Energy and Water Management Award, and Secretary's Honors Awards. His personal achievements include several civilian, Navy, and Marine Corps military decorations. ■

TWENTY YEARS

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