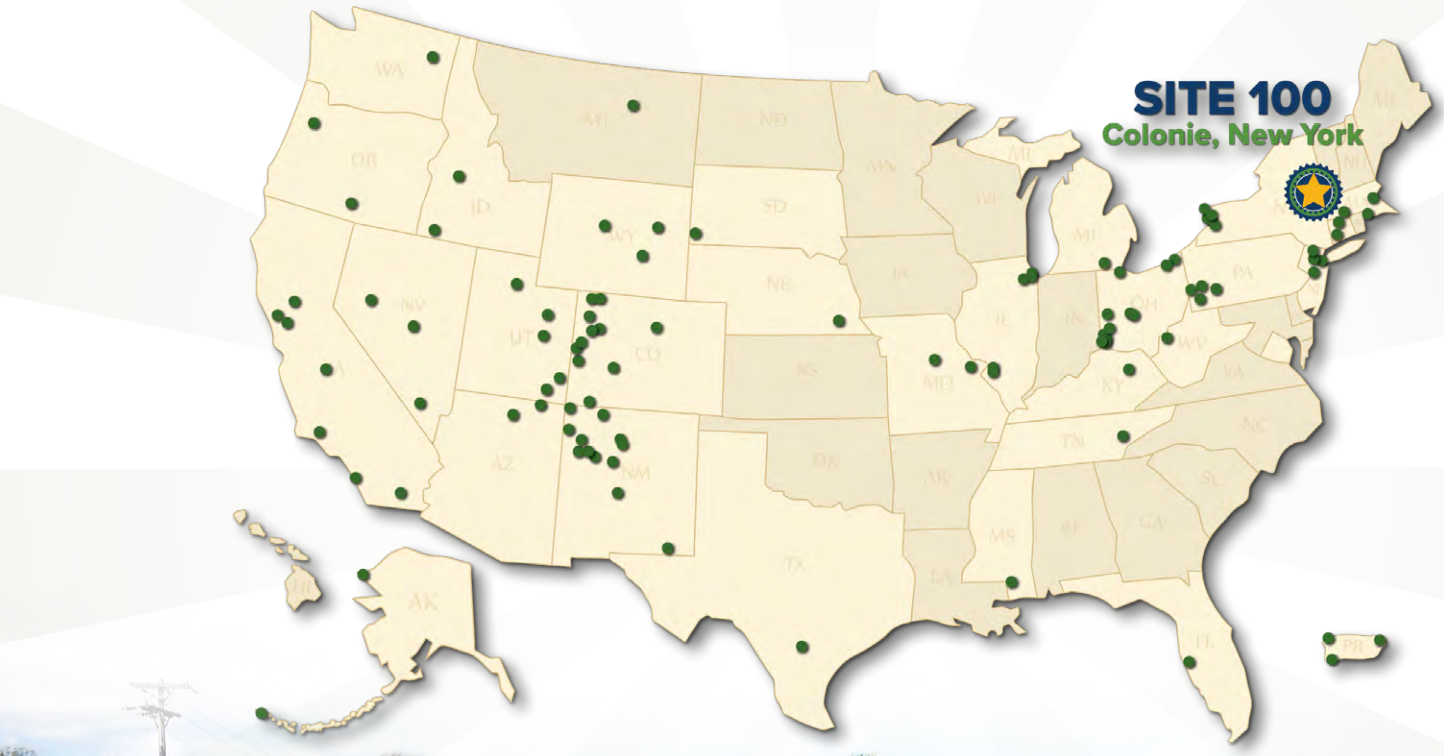
U.S. Department of Energy

# PROGRAM UPDATE

LM100
DOE Legacy Management's 100th Site

October-December 2019




Developing an Aviation Program for Unmanned Aircraft Systems

**LM Marks Its 100th Site**

LM Achieves Unconditional Closure of Legacy Site

# Director's Corner

Our program may be growing, but our world keeps getting smaller.

In this issue of *Program Update*, you'll read about how we recently transitioned our 100th site to the Office of Legacy Management (LM). By 2025, we expect to oversee 122 sites. You'll also read about how a handful of LM staff, including myself, traveled to Germany in October to attend an international symposium and network with colleagues from around the world.

The trip made me reflect upon the many benefits of international collaboration, and the ease with which we are able to access and interact with global knowledge networks. Thanks to information technology, the distance from Grand Junction, Colorado, to Chemnitz, Germany, is just a few clicks of a mouse.

Many of LM's 100 sites are in very remote places, from islands off Alaska to the high plains of Wyoming. Our staff, too, are spread between multiple offices and far-flung field stations. But while some of our locations may seem like they are literally in the middle of nowhere, LM is situated in the very center of a global knowledge community. We collaborate and partner daily with a national and international community of thought leaders dedicated to long-term stewardship, science and technology, and education and outreach. We grapple with the same challenges, celebrate the same successes, and share our lessons learned.

In Germany, we met with some familiar faces at the International Atomic Energy Agency's (IAEA) Uranium Mining Remediation Exchange Group (UMREG) and at the Wismut International Mining Symposium. In particular, we caught up with Dr. Michael Paul, who served as a keynote speaker during our 2018 Long-Term Stewardship Conference in Grand Junction. We met with colleagues from Australia and Portugal who also attended the LTS Conference, as well as made new connections with professionals from around the world.

At UMREG, the Defense-Related Uranium Mines (DRUM) Program was the highlight of the meeting. DRUM is a partnership between DOE, federal land management agencies, and state abandoned mine lands programs to verify and validate the condition of 2,500 defense-related uranium mines on federal public lands by the year 2022. The program builds on DOE's *DRUM Report to Congress*, which found that 4,225 purchase records exist across the nation. Most of these mines, which provided uranium ore to the U.S. Atomic Energy Commission for defense-related activities that occurred between 1947 and 1970, are abandoned.

Nurturing these international collaborations is part of LM's commitment to long-term stewardship. Next summer, we plan to host a workshop in Grand Junction for the IAEA, whose mission is to promote the safe, secure, and peaceful use of nuclear technologies. The workshop will bring about two dozen experts from Eastern Europe and Central Asia to town for a week of presentations and site visits.

As the world gets smaller, we'll continue to grow these global exchanges, strengthening old bonds and forging new ones. Based on our accomplishments over the years, we are an organization recognized internationally for our work and for our open collaboration across borders.

Finally, as 2019 draws to a close, it's time to pause from our work. I wish you a restful holiday season celebrated with family and friends. The new year will surely bring us new challenges and opportunities. I look forward to meeting them with you.

Warm Regards,

Carmelo

Carmelo Melendez

*Welcome to the October-December 2019 issue of the U.S. Department of Energy (DOE) Office of Legacy Management (LM) 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****.*

## LM Goals

**Goal 1**
Protect human health and the environment.

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

**Goal 3**
Safeguard former contractor workers' retirement benefits.

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

**Goal 5**
Sustain management excellence.

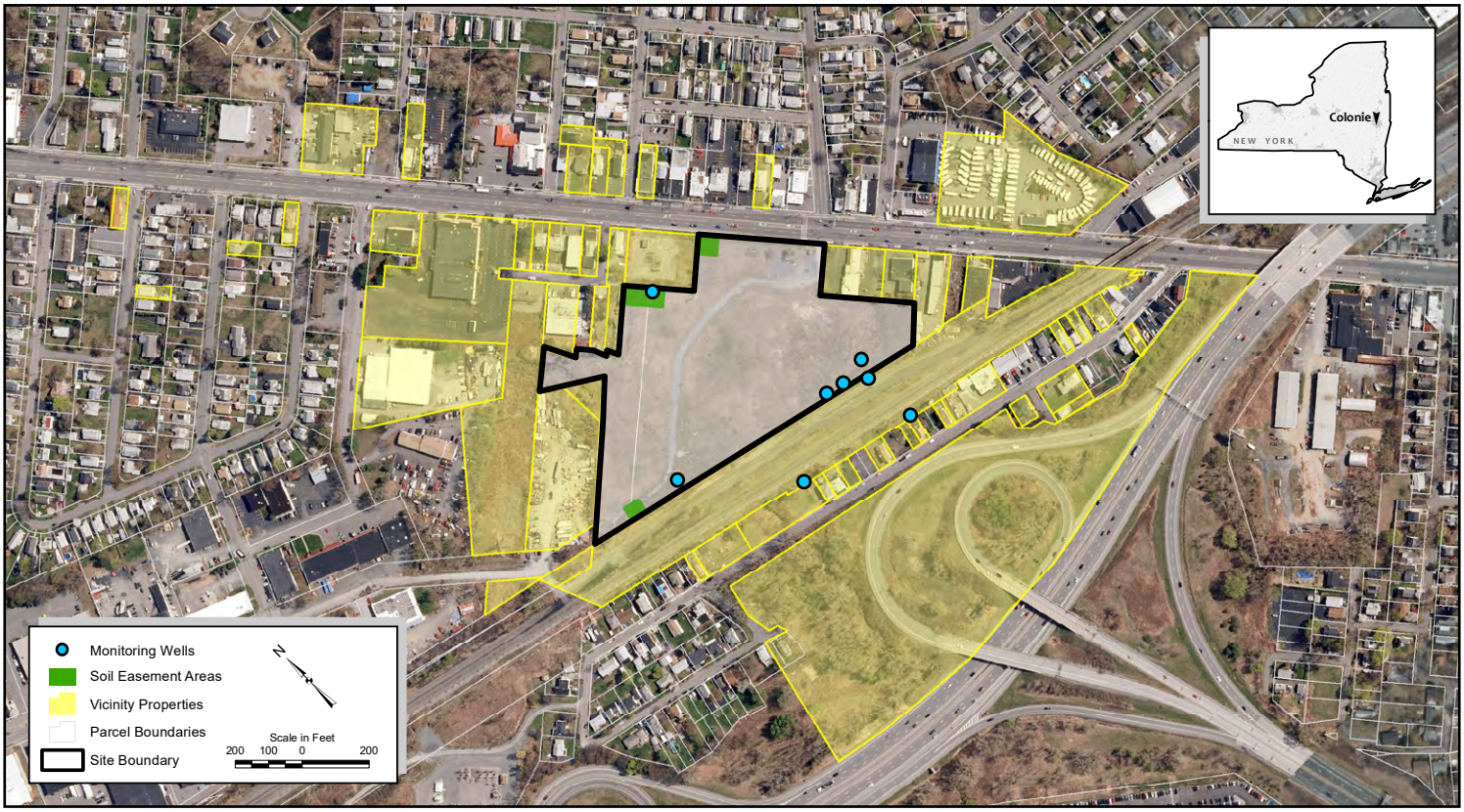
**Goal 6**
Engage the public, governments, and interested parties.

*Cover: On October 15, 2009, the Colonie, New York, Site was transferred to LM. Colonie became the 100th site in the LM program — a major milestone in LM's management of the long-term responsibilities associated with legacy sites.*

# Inside this Update:

GOALS 1, 4, & 5

# LM Marks Its 100th Site




*Colonie, New York, Site.*

When the U.S. Department of Energy (DOE) Office of Legacy Management (LM) was established in 2003, it became responsible for 33 sites where environmental remediation of sites impacted by nuclear weapons production during World War II and the Cold War was complete.

On October 15, 2019, LM marked a major milestone when the 100th legacy site was added to its program. The transfer of the Colonie, New York, Site to LM reflects the sustained progress by DOE in managing the long-term responsibilities associated with legacy sites.

"The transfer of Colonie into LM is a special moment for us," said LM Director Carmelo Melendez. "It marks our commitment to protecting human health and the environment within communities that made sacrifices for this nation during a critical period in our history. As our program grows, we'll continue to collaborate with experts, utilize new technologies, and implement best practices for providing the highest-quality, long-term surveillance for these legacy sites."

Located in Albany County, the 11.2-acre Colonie site was owned and operated by National Lead Industries from 1937 to 1984. The plant manufactured various components using uranium and thorium from 1958 to 1968. Other materials were manufactured using depleted uranium until 1984. These activities resulted in residual radiological contamination on portions of the site. Contamination also impacted site groundwater and privately owned, neighboring properties.

In 1997, Congress transferred site cleanup actions under the Formerly Utilized Sites Remedial Action Program to the U.S. Army Corps of Engineers (USACE). USACE completed cleanup of the main site and three remaining vicinity properties.

The cleanup resulted in a site that is suitable for either commercial or residential use. Three small areas are inaccessible and placed under an environmental easement. The site, which is owned by the federal government, will be made available for future redevelopment to benefit the community. LM activities

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## LM Marks Its 100th Site

at the site will include long-term surveillance and maintenance to ensure that the site remains protective of human health and the environment.

"These cleanup efforts are the result of years of collaboration between government agencies, community organizations, and individual stakeholders," said LM Colonie Site Manager Darina Castillo. "We all carry a shared responsibility for the long-term care of these sites, with the ultimate goal being the protection of human health and the environment."

As part of its mission, LM strives to identify beneficial reuse opportunities for its sites. This may include transferring land to a third party, developing on-site educational resources, or restoring natural habitats.

LM expects to oversee 122 sites by the end of 2025. ❖

*Colonie, New York, Site.*

GOAL 6

# Contamination Connoisseur – Dr. Higley Explains Radiation Complexities Across the Country

Subject matter expert. Department head. Comic series heroine.

*Dr. Kathryn Higley.*

If you enter "Kathryn Higley" in any web search engine, you'll quickly learn she's a reliable, tell-it-like-it-is, undisputed expert on how radiation can impact the environment and the public. And yes, she's even in the Popular Science web comic "Fall(out) Guy."

Her interest in the environmental transport and fate of radionuclides — an interest common with many specialists working for the U.S. Department of Energy Office of Legacy Management (LM) — began when she was an undergraduate student at Reed College in Portland, Oregon. In between semesters while earning a chemistry degree, she took a one-month course to learn the basics of becoming a nuclear power reactor operator. Higley reflected, "When I was a freshman, I had a choice of learning how to fly a plane or run a reactor. The plane cost money and the reactor was free, and I was a poor student, so I decided I wanted to learn how to run a reactor."

The Reed Research Reactor is the only reactor operated primarily by undergraduates for research and educational projects in the Portland, Oregon, area.

This course, along with mentoring from Ronald Kathren, a health physics professional at Portland General Electric (PGE) and volunteer at Reed College, molded her interest in radioactivity, including how it moved in the environment and how to protect against it. Her first career-related job was at the Hanford site in Washington counting radioactive samples. She then became a radioecologist at the PGE Trojan Nuclear Power Plant in Oregon before spending 10 years at the Pacific Northwest National Laboratory (PNNL) in Washington in environmental health physics.

At that point, earning a Ph.D. became her top interest, leading her to Colorado State University where she worked for radioecology pioneer F. Ward Whicker. Her work included conducting extensive sampling at the former Rocky Flats Plant 903 pad, an outdoor area used to store radioactive waste.

"I spent a lot of time face down in the dirt at Rocky Flats, taking core samples to analyze migration of (radioactive elements) plutonium and americium," Higley said.

After earning her Ph.D., she returned to Rocky Flats to do field work and public outreach in the early 1990s before site closure and cleanup began. "I tried to understand some of the mysteries of the migration of plutonium and americium in those soils," she said.

*Continued on page 7*

*Kathryn Higley and Ernest Antonio conducting field work near the Rocky Flats Plant 903 pad hillside, 1990 (Courtesy of Colorado State University).*

*Continued from page 6*

# Contamination Connoisseur – Dr. Higley Explains Radiation Complexities Across the Country

The Rocky Flats Plant produced nuclear and nonnuclear weapons components from 1952 to 1994.

After her career brought her back to Oregon, this time at Oregon State University, her combination of experience and education helped her flow forward in the pool of subject matter experts on environmental impacts of radiation contamination.

"I think answering the phone is a very important part of it. One of the advantages I have is the freedom to speak as an academic," Higley said.

Teaching helped her learn how to present information in a way that is understandable and reasonable to people. But the challenge of reaching an audience is always there. Dr. Higley believes protecting people and the environment includes getting people to understand that small amounts of residual contamination result in very low human risk. The right regulations, focused first on cleaning up and then on how decontaminated sites can be used, can be a real win for everyone.

"The Department of Energy facilities are amazing ecological reserves," she said. "Large portions of sites have not been developed or used for decades, so there's a massive amount of relatively pristine, if slightly contaminated, environment."

Remediation, according to Dr. Higley, is not "black and white and easy." Optimizing efforts should consider the risk of moving contamination, how removal can further impact the environment, and if the cost and effort are doing more harm than good. As she tells her students, there's no single right answer. She continuously challenges them to remain curious, ask questions, understand perspective, and work ethically.

For long-term environmental stewardship, Dr. Higley says it's important to remind students to focus on balancing residual contamination response efforts with ethical transparency. As she explains, remediation is based on a trust that people hired to do the job will do what they say they're going to do. The ramifications of making unethical choices negatively impacts not only the site, but the public trust in all contamination cleanup efforts.

Throughout the years, Dr. Higley has talked to "a ton" of people, including reporters, scientists, students, stakeholders, and the public. She speaks calmly and casually, not concerned with how she will be portrayed because she's learned to be comfortable with her delivery style and message.

"I try to put it in a context they can understand," she said. "Scientists hate to talk in absolutes, so (I think to myself), how can I say it and be reasonably accurate?"

Some don't agree with her, others may not like her informal responses. Others, like web comic creator Maki Naro, immortalize her. In his 2016 web comic "Fall(out) Guy" on popsci.com, Dr. Higley is portrayed as a tough, smart, funny, and helpful scientist living in a post-nuclear war forest. She helps Naro, the comic's hero, understand radiation effects in this new environment, and how remediation techniques can greatly reduce hazards to humans. Her portrayal from a few years ago seems true to her personality today. ❖


*Fall(out) Guy, episode 7. store.makinaro.com (Courtesy of artist Maki Naro).*

GOAL 1

# LM Achieves First Unconditional Closure of Legacy Site

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) announced the unconditional closure of a unit of its Pinellas County, Florida, Site.

The closure order, issued by the Florida Department of Environmental Protection, specifies that DOE no longer has any responsibilities for the unit, known as the 4.5 Acre Site, and that the landowner has full and unrestricted use of the property.

The unconditional closure is a first for an LM site.

*A bioinjection solution mixing station at the Pinellas County site.*

"Earning an unconditional closure is an enormous tribute to DOE's commitment to long-term stewardship at Pinellas, and the many dedicated staff who have worked for decades to make this happen," said LM Site Manager Scott Surovchak. "We utilized multiple technologies in innovative ways to meet very stringent requirements for remediating the site to a clean condition."

The Pinellas County site is located in Largo, across Tampa Bay from the city of Tampa. The privately owned 4.5 Acre Site is situated within the northwest corner of the overall site. The unit was previously part of the former Pinellas Plant, constructed by General Electric in 1956 to develop and manufacture components for the nation's nuclear weapons program. The 4.5 Acre Site was used for the disposal of drums containing waste resins and solvents, resulting in contamination of soil and groundwater in the shallow aquifer.

The drums and the contaminated soil were removed in 1985. In 1990, DOE began operating a groundwater extraction and treatment system, followed by a dual-phase extraction system that removed both liquid- and vapor-phase contaminants. By 1998, DOE had treated approximately 9.45 million gallons of contaminated groundwater. The dual-phase system became less effective, however, as contaminant concentrations decreased.

To treat the remaining contaminants at the 4.5 Acre Site, DOE turned to biosparging, a process of using naturally occurring microorganisms to biodegrade contaminants into nontoxic compounds. After operating a biosparging system for several years, results from an investigation in 2007 indicated that a contaminant source was still present in the soil. From 2008 to 2009, DOE excavated approximately 2,500 cubic yards of contaminated soil using a large-diameter auger method. To treat contaminants remaining in the groundwater at low concentrations after the soil removal, DOE performed three bioinjection events in 2010, 2013, and 2016, injecting a native microbe combined with emulsified soybean oil into the soil.

*Direct-push rigs used for the bioinjection process at the Pinellas County site.*

"The soybean oil gave the microbes a viable natural environment in which to do their work," Surovchak explained. "And because the microbes are anerobic, we took extraordinary measures to eliminate or minimize their exposure to oxygen, in order to keep them healthy."

While LM no longer bears environmental liability for the 4.5 Acre Site, the office will continue its long-term stewardship activities elsewhere at the Pinellas County site. This includes employing the bioinjection method to treat groundwater contaminant plumes in the Building 100 area on the southeastern portion of the site. The U.S. government does not own, and DOE does not have jurisdiction over any of the properties that constitute the Pinellas County site. ❖

# From Weapons Production to Business Development

*Mike Pasko, the director of Intergovernmental and External Affairs, speaking at the celebration of final property transfer to the Mound Development Corporation.*

*Peter O'Konski, the deputy director of LM, speaking at the Mound site transition celebration.*

On November 5, the Mound Development Corporation, a non-profit community development arm of the city of Miamisburg, hosted a celebration at the Mound, Ohio, Site in Miamisburg. The event, held at the Mound Cold War Discovery Center, celebrated the completion of property transfers from the U.S. Department of Energy (DOE) Office of Legacy Management (LM) to the Mound Development Corporation for beneficial reuse.

The celebration recognized the achievements and cooperation of government and private entities in transitioning the 306-acre former weapons and research facility within the Miamisburg city limits into an attractive, successful business site.

Two leaders from DOE: LM Deputy Director Peter O'Konski, and Mike Pasko, the director of Intergovernmental and External Affairs, joined representatives from the U.S. Congress, Ohio House of Representatives, city of Miamisburg, the U.S. Environmental Protection Agency (EPA), Ohio EPA, Ohio Department of Health, and others who participated in the celebration.

Speakers from DOE and EPA cited the Mound site as an excellent example of the U.S. commitment to clean up former Superfund sites and transition them to beneficial reuse. All speakers recognized Miamisburg Mayor Richard Church for his 20-plus years dedicated to bringing this reuse vision to a reality. They also credited the continued and vital support and cooperation from local and regional officials, former workers, and community members.

In 1989, the Mound site was placed on the National Priorities List, a list of top-priority hazardous waste sites eligible for cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) — commonly known as Superfund — due to discovery of volatile organic compounds in groundwater beneath the site.

The DOE remediated the site following a Federal Facility Agreement with EPA and Ohio EPA under CERCLA. After the remediation was finalized in 2010 at a cost of approximately $1 billion, the site met requirements for industrial or commercial reuse.

DOE transferred ownership of remediated parcels from 1999 to 2019 to the Mound Development Corporation. The final transfer occurred on September 10, 2019. The site is now the Mound Business Park and is home to more than 16 businesses and approximately 400 employees.

GOALS 1 & 6

# 3D Hydrogeological Visualizations Bring Data Analysis to Life

A three-dimensional model of the groundwater plume beneath the Monument Valley, Arizona, Processing Site dances on Ron Kent's computer screen. With a click of his mouse, Kent, a contract groundwater hydrologist for the U.S. Department of Energy (DOE) Office of Legacy Management (LM), can rotate the visualization, zoom in and out, and pan through the site. The data-rich model lets him analyze how the plume is changing over time and evaluate site monitoring activities.

"These visualizations enable us to perform analyses that are difficult to do otherwise," Kent explains. "We can synthesize decades worth of data, calculate the mass and footprint of a plume, and learn more about plume dynamics — is a plume shrinking or growing?"

The LM Support (LMS) Groundwater and Geochemistry Group began using Earth Volumetric Studio (EVS), the software behind these visualizations, in 2017. With EVS, the team is able to create visualizations and animations of geology, groundwater, and contaminants of concern at LM sites in a user-friendly package that is applicable to both scientists and stakeholders.

"It's been very visually helpful and useful in communicating groundwater site conditions with our stakeholders," said Angelita Denny, the LM site manager for Monument Valley.

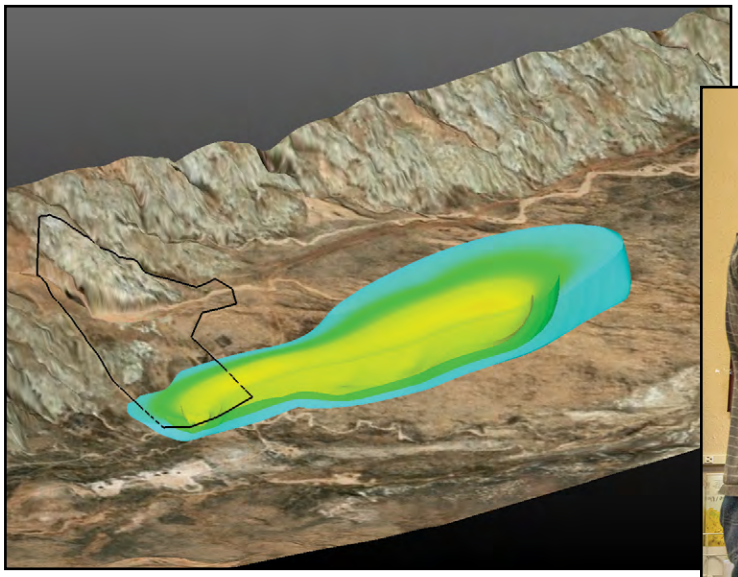
In addition to Monument Valley, the team has created visualizations for a handful of other LM sites, including Shiprock, New Mexico; Tuba City, Arizona; Riverton, Wyoming; and Naturita, Colorado.

"There is an initial investment up front as you need to input all the data, but then it's seamless to update," said Al Laase, who heads the Groundwater and Geochemistry Group.

Laase emphasizes the value that the visualizations bring to LM's mission of long-term stewardship. "We get a tremendous amount of information from the analysis of a 3D plume, and this analysis can change our interpretation of a site," he said.

The visualizations are especially useful to LM's communication, education, and outreach efforts. Staff have presented them to stakeholders at the Navajo/Hopi/DOE quarterly meetings. They've also demonstrated the visualizations at a handful of STEM (science, technology, engineering, and mathematics) outreach events, ranging from high schools on the Navajo Nation to the 2018 American Indian Science and Engineering Society conference. Using a mouse, students and others at these events were able to "fly" around a 3D plume map overlain on aerial imagery of LM sites.

"EVS is a great tool that I hope to integrate into more sites that I manage," Denny said. ❖



*A screen capture shows an EVS visualization of the nitrate plume at LM's Monument Valley, Arizona, Site from December 2018. The black line represents the location of the former processing site. The colors indicate nitrate concentrations greater than 10 (blue), 50 (green), and 100 (yellow) milligrams nitrogen per liter.*

*Ron Kent, Allison Reynolds, and Mike Morse from LMS collaborate on a hydrogeological visualization using EVS.*

GOAL 4

# Developing an Aviation Program for Unmanned Aircraft Systems

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) Asset Management Team is developing an Aviation program to ensure safety is incorporated into planning and execution efforts for manned flights and unmanned aircraft system (UAS, or drone) flights conducted at our sites. LM uses manned flights to collect Light Detecting and Ranging data at our Weldon Spring, Missouri, Site and for aerial photography at our Rocky Flats Site in Colorado. LM also uses UAS to collect data at our Uranium Mill Tailings Radiation Control Act sites to explore the possibility of augmenting our long-term surveillance and maintenance with the new technology to meet regulatory requirements.

One component of our Aviation program is to ensure LM-appointed aviation personnel meet DOE standards for aviation management and safety. In mid-October, LM Aviation Program Manager Deb Steckley and LM Aviation Safety Officer Bruce Akers participated in training and learned to fly drones in preparation for obtaining their Federal Aviation Administration Part 107 pilot license for small UAS. They successfully passed the license exam on October 18 and will soon receive their licenses. Drone pilot certification will ensure our LM aviation personnel have the knowledge and skills to sufficiently audit drone operations at LM sites to ensure activities are safe and consistent with DOE Order 440.2C, *Aviation Management and Safety* requirements. ❖

*Aviation Safety Officer Bruce Akers and Aviation Program Manager Deb Steckley flying the Phantom 2 Quadcopter at Cherry Creek State Park flying field near Denver, Colorado.*

GOAL 6

# Stakeholder Communication and Collaboration Are Key to Site Management

Effective long-term care, control, and management of uranium disposal sites licensed under the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 depends heavily on active communication and collaboration with stakeholders. The U.S. Department of Energy Office of Legacy Management (LM) and LM Support (LMS), the Office's support contractor, take a proactive approach to work in partnership with various state and local agencies, community organizations, and emergency responders near disposal site locations.

At the Lowman, Idaho, Disposal Site located in Boise County, Idaho, LM works closely with communities in the Lowman and greater Boise County area. During annual site inspections, various stakeholders, including the Idaho Department of Environmental Quality (IDEQ) defense site remediation coordinator, the head of the Boise County Noxious Weed Department, and U.S. Nuclear Regulatory Commission personnel are invited to attend, provide feedback, ask questions, and take part in the inspection.

In addition to annual site inspections, LM employs local organizations and individuals to provide site support and maintenance. The utilization of local representatives with site activities helps to build collaborative partnerships, ensures community involvement in decision-making, reduces misunderstandings, and promotes the interaction between LM and the various communities in which LM works.

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*LM Site Manager Tashina Jasso meets with LMS and IDEQ personnel during the 2019 Lowman disposal site annual inspection.*

*LM and LMS personnel in discussion during the 2019 Lowman disposal site annual inspection.*

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## Stakeholder Communication and Collaboration Are Key to Site Management

Paul Rekow, the head of the Boise County Noxious Weed Department, provides support for herbicide application as well as noxious weed and ponderosa pine control on the disposal cell cover at the Lowman disposal site. As a local resident and the fire chief of the Lowman Volunteer Fire District, Mr. Rekow also provides LM with site updates in emergency situations and is able to inform local community members with questions or concerns regarding the site.

To support local community awareness, the LM site manager recently provided a site tour to Boise County Emergency Management Coordinator Robert Showalter. The emergency management coordinator is tasked with planning and providing responses to disasters, including forest fires, earthquakes, and landslides. Mr. Showalter closely interacts with Boise County first responders, law enforcement, and fire departments. His awareness of the Lowman disposal site helps to provide information to any concerned parties who may be working in the area and will notify LM of any unusual or potentially detrimental activities around the site.

During the next few months, LM will be submitting postcards to applicable stakeholders sharing UMTRCA details, LM contact information, and requests for notification regarding vandalism, range fires, flooding, or other concerns on or around disposal sites. The list of recipients for the Lowman disposal site includes both state of Idaho and Boise County representatives, and emergency response organizations in the area.

Promoting dialogue with the public and pursuing intergovernmental collaboration allows LM to foster relationships, distribute information to interested parties, and show LM's commitment to the site and to the local community. The importance of community involvement is paramount to the success of sound disposal and stabilization of uranium mill tailings to protect human health and the environment. ❖


*Boise County Emergency Management Coordinator Robert Showalter in front of his emergency response vehicle.*

*LM Site Manager Tashina Jasso and IDEQ Defense Site Coordinator Dean Nygard.*

GOALS 1 & 6

# LM Participates in International Symposium in Germany

*David Shafer joined a field trip to view the remediation of the former Soviet German Crossen uranium processing plant in the city of Zwickau. Photo Credit: WISSYM Organization Committee.*

U.S. Department of Energy Office of Legacy Management (LM) Director Carmelo Melendez and LM staff traveled to Chemnitz, Germany, to collaborate with international colleagues on the long-term stewardship of legacy sites. During the week of October 6, the group participated in the Wismut International Mining Symposium (WISSYM 2019) and a concurrent International Atomic Energy Agency (IAEA) Uranium Mining Remediation Exchange Group (UMREG) meeting.

"International collaborations are really important because they strengthen your self-awareness, science and technology, and — since we are a learning organization — our education," said Melendez.

WISSYM allows attendees to share their diverse experiences in remediation and their strategies for achieving a sustainable future at legacy sites. In keeping with the theme of the symposium, "Shaping the future: Long-term experiences and innovations in mine remediation," Director Melendez discussed how we shape the future of our legacy sites through our commitment to long-term stewardship. He also stressed the value of participating in forums like WISSYM.

The symposium was sponsored by Wismut GmbH, a German government-owned company that leads decommissioning, cleanup, and rehabilitation of uranium mining and processing sites. WISMUT Managing Director and Symposium Chair Michael Paul provided the opening and closing remarks. Paul served as a keynote speaker at the LM 2018 Long-Term Stewardship Conference.

LM staff also participated in the meeting of the Uranium Mining Remediation Exchange Group (UMREG). Sponsored by IAEA, UMREG began in the early 1990s as a collaborative effort between the United States and Germany to find solutions to the legacy of uranium mining and milling left behind by the Cold War. It has since expanded to include participants from Canada, Australia, Africa, South America, Central Asia, and Europe.

LM Director of Site Operations David Shafer discussed the implications of oil and gas activities, particularly hydraulic fracturing near LM disposal sites. Defense-Related Uranium Mines (DRUM) Program Technical Lead Brent Lewis shared an overview of the history of the DRUM Program, accomplishments, and future goals. DRUM Project Manager Cassie Gauthier spoke

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# LM Participates in International Symposium in Germany

about the program's risk screening process used to evaluate the hazards posed by abandoned uranium mines. The presentations were well received by the group, and they expressed considerable interest in learning more about the techniques used in the DRUM Program.

Melendez, Lewis, and Gauthier also joined a conference field trip to Jáchymov in the Czech Republic. There, they donned hard hats to tour Mine Svornost, which began as a silver mine in the 1510s and went on to supply uranium to the German atomic bomb project during World War II and the Soviet nuclear arsenal during the Cold War. Today it serves as a source of medicinal radon water for the Jáchymov Spa. Their trip also included a stop at the Royal Mint in Jáchymov to view exhibits on local mining and minerology.

Meanwhile, Shafer joined a field trip to the former Soviet German Crossen uranium processing plant in the city of Zwickau.


*DRUM Project Manager Cassie Gauthier spoke about the risk screening process used by the program.*


*DRUM Program Technical Lead Brent Lewis provided an overview of the LM DRUM Program.*

The trip not only highlighted the progress that has been made there but also stressed the importance of environmental laws in remediation projects.

"It was a busy and productive week," said Gauthier, reflecting on the trip to Germany. "The connections I made and the new ideas that I heard will definitely improve my ability to keep the public safe back here in the United States." ❖


*LM Director Carmelo Melendez (2nd from left) joined Peter W. Waggitt of Australia, Dr. Maria de Lurdes Dinis of Portugal, and Michele Roberts and Brent J. Moldovan of the IAEA to discuss the remediation of uranium mines and mills around the world at the 2019 WISSYM International Mining Symposium in Germany.*

*Safety comes first, as LM Director Carmelo Melendez, Brent Lewis, and Cassie Gauthier prepare to tour the historic Mine Svornost in Jáchymov along the Czech Republic border with eastern Germany.*

# IAEA Explores Concept of Social License in Remediation of Legacy Sites

In September, representatives from the U.S. Department of Energy and Office of Legacy Management (LM) and the Office of Science participated in a five-day workshop in Porto, Portugal, on the concept of a "social license" in the remediation of uranium legacy sites. The workshop was part of the International Atomic Energy Agency (IAEA) International Forum on the Regulatory Supervision of Legacy Sites (RSLS) in which LM has participated since 2010.

The IAEA was formed in 1957 to serve as a center for international cooperation in promoting safe, secure, peaceful use of nuclear technology in a wide range of areas, including energy generation, health, food and agriculture, and environmental protection. The IAEA has over 170 member states and reports to the United Nations General Assembly and Security Council. Today, a major focus of the IAEA is remediation of legacy nuclear sites, many from the Cold War.

A social license is an intangible, unwritten, implied social contract, demonstrating ongoing approval by the local community for activities conducted by operators and regulators at legacy nuclear sites. The focus of the workshop was on establishing and maintaining a social license as part of successful environmental cleanup, post-closure care, and even beneficial reuse of former uranium mines and mills throughout the world. However, some attendees were interested in building social license in areas where uranium, thorium, or other rare earth mining was beginning for the first time.

Workshop participants included representatives from major mining countries, such as Canada, Australia, Brazil, and the United States, as well as other member states in Europe (including the host country of Portugal) and eastern and central Asia. Member states of Africa were represented by the largest group of participants to have ever attended an RSLS workshop.

LM Director of Site Operations David Shafer briefed workshop participants on the challenges of communicating with stakeholders about remediation of legacy sites in areas with high background levels of constituents, such as uranium, that are "contaminants" at legacy sites.

"Besides technical challenges, such as determining what remediation standards should be, the idea of background levels that can pose health risks can make stakeholders skeptical that you even know what is and is not contaminated," said Shafer.

LM Site Manager Sue Smiley talked about the history of the former Feed Materials Production Center in Ohio (now the Fernald Preserve), with a focus on regulator and stakeholder relations during environmental cleanup through current long-term surveillance and maintenance activities. Smiley also participated in a lively panel discussion on Bridging the Gap between Actual and Perceived Risks of Interested Parties in Uranium Legacy Site Remediation.

*Cunha Baixa Old Mine in Portugal. Remediation technologies include active and passive wastewater treatment systems near a residential area.*

Kristen Ellis, the chief of staff of the Office of the Under Secretary of Science gave an overview of DOE and challenges that the Environmental Management program has in building and maintaining its social licenses for the EM sites that remain to be closed.

In addition to talks, case studies, and panel sessions, workshop participants also visited areas of historic uranium mining in Portugal.

The workshop in Portugal was the latest in a series of successful RSLS workshops, the first of which was hosted by LM in Grand Junction, Colorado, in 2012. In July 2020, LM and the IAEA will sponsor a workshop on long-term surveillance and maintenance of uranium legacy sites. Attendees to the 2020 workshop will be from the Central Asian Republics of Kyrgzstan, Tajikistan, and Uzbekistan. Each of these member states were major sources of uranium during the Cold War when they were a part of the Soviet Union. ❖

GOAL 2

# Competition Readies the Next Generation of Cybersecurity Professionals

The fifth U.S. Department of Energy (DOE) CyberForce Competition was held November 15-16. The event is a cyber workforce development competition focusing on the defensive hardening of energy cyber infrastructure.

This year's competition featured 105 collegiate teams from 32 states and one territory, with participants ranging from undergraduate freshmen to Ph.D. candidates. The teams were divided among 10 host sites across the country.

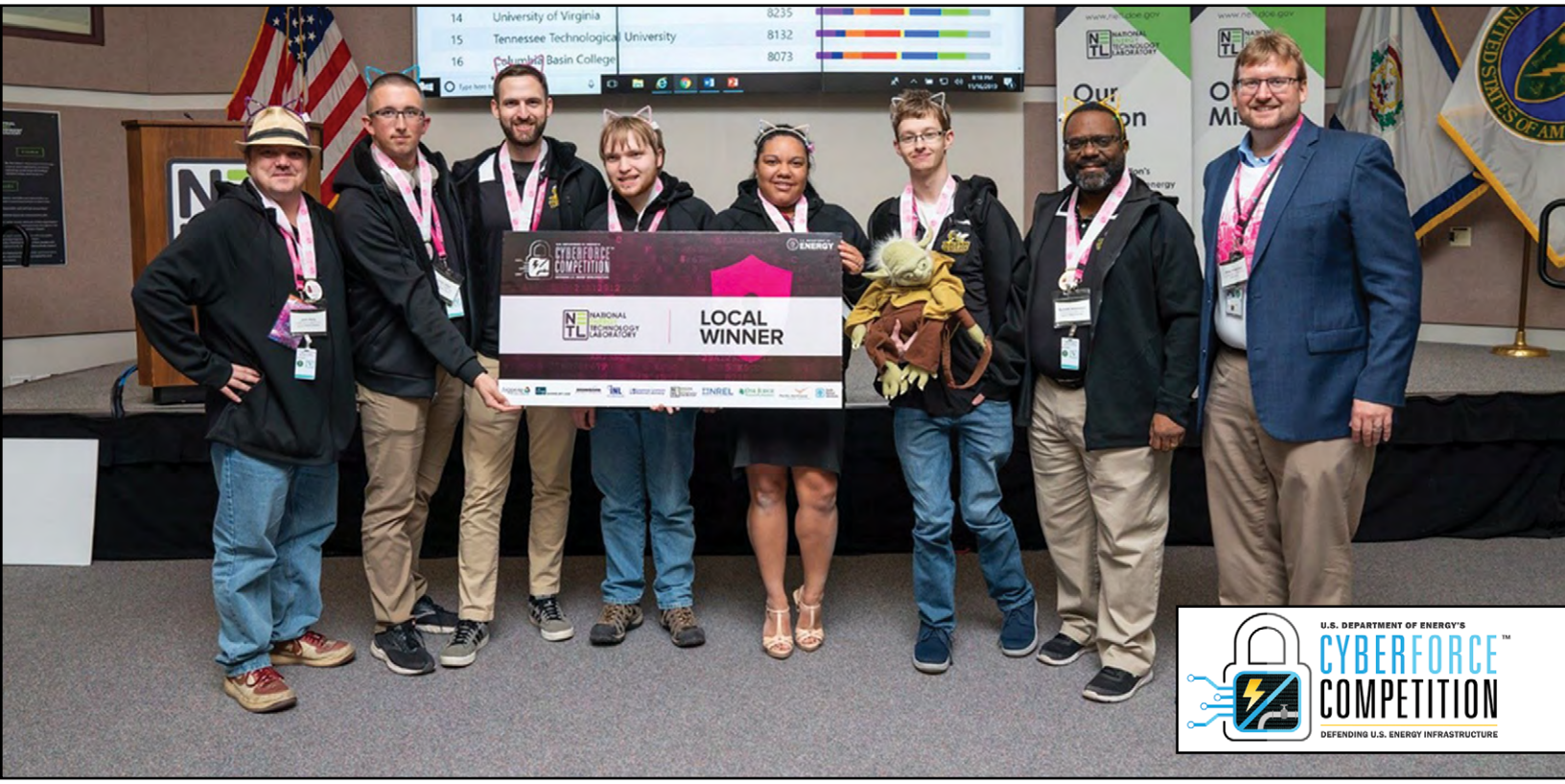
Bob Walker, an IT specialist with the DOE Office of Legacy Management (LM) participated in this year's competition at the invitation of the National Energy Technology Laboratory (NETL), who was hosting the competition for the first time. Walker served on the four-member Chief Information Security Officer (CISO) panel, which evaluated the teams.

The CISO panel scores were combined with scoring related to scenarios involving protecting the integrity of four systems — an energy company's solar generation facility, electric substation, data center, or manufacturing plant.

Blue Teams had to protect these environments for nearly eight hours while Red Teams initiated "adversarial" attacks against the Blue Teams' systems throughout the day. Red Teams consisted of experts from the National Labs, the private sector, and the U.S. National Guard. The attacks simulated those on industrial control system components, real-world anomalies and constraints, and interaction with users of the systems.

A real-time scoreboard was available to monitor the leaders throughout the seven-hour competition. There were many teams jockeying for the top spots. Baldwin Wallace University from Berea, Ohio, had the highest score from the NETL teams and finished seventh overall. The overall nationwide winner was University of Maryland, Baltimore County.

The interest and growing participation in this event indicate future events will be held by DOE to close the skills gap and shortages of cybersecurity experts in the federal workforce.




*Cyberforce competitors from Baldwin Wallace University. Winners of the competition at the NETL host site: (From L to R) John Kelly, Jacob Jolley, Josh Neubecker, Ian Walton, Meredith Kasper (Team Captain), Chris Midkiff, Kenneth Atchinson (Coach), and Dr. Brian Anderson, Director of NETL.*

GOAL 6

# Grand Junction Office Celebrates International Nuclear Science Week

*Representatives from LM and LM Support (LMS) received the Nuclear Science Week Proclamation presented by the Board of Mesa County Commissioners. From left to right are Commissioner Scott McInnis, Ken Kreie (LM), Commissioner John Justman, Shawn Montgomery (LM), Richie Ashcraft (LMS), Luke Carleo (LMS), and Commissioner Rose Pugliese.*

*Local educators tour the Atomic Legacy Cabin and STEM booths during the teacher open house.*

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) in Grand Junction, Colorado, marked International Nuclear Science Week, October 14-18, 2019, by hosting events across Mesa County. Nuclear Science Week is an international, week-long celebration aimed at promoting interest in all aspects of nuclear science. Each day of Nuclear Science Week provided opportunities for learning about contributions and innovations in nuclear sciences, as well as exploring career options in nuclear science fields.

The week kicked off with both Mesa County and the city of Grand Junction officially proclaiming the week as Nuclear Science Week. The proclamations provided a great opportunity for LM to engage with local stakeholders and provide some history about LM's presence in the community and the work we do.

Later in the week, LM hosted a series of STEM Expo events at local high schools. The expos included a variety of booths for students focused on nuclear science, energy, radiation, soil science, ecology, and botany. Students also had the opportunity to explore STEM careers. LM scientists and experts were on hand to discuss all aspects of nuclear science and to hand out free giveaways. Students also learned about LM's new interpretive center, the Atomic Legacy Cabin.

"This community played a significant role in our nation's nuclear and atomic history, so LM is offering this program to local schools and educators to help them not only understand the history of this valley, but also to encourage students to explore STEM-related career opportunities at an early age," said LM Public Participation Specialist Shawn Montgomery.

The week's festivities wrapped up on Friday, October 18, with a teacher open house at the historic Atomic Legacy Cabin. The cabin was once the epicenter of the nationwide search for uranium started by the Manhattan Project and later escalated during the Cold War, but now serves as a free interpretive center for the community. The open house included tours of the interpretive center and examples of STEM outreach booths and programming available for presentations or school events.

"LM is thrilled to have the opportunity to participate in Nuclear Science Week by connecting with students and educators alike through STEM education," Montgomery said. "We look forward to ongoing partnerships across the community and sharing the resources LM has to offer."

Educational and outreach programs are being developed that support the cabin's history, as well as STEM curricula for all grade levels. LM experts in fields such as history, chemistry, hydrology, geology, engineering, ecology, and GIS analysis provide support for these programs. All educational programming is provided at no cost to schools and community organizations. ❖

# LM Plays Integral Part in Grand Junction River Park

The city of Grand Junction is breaking ground on a new River Park at the site of a former uranium processing mill.

Work on the banks of the Colorado River includes creation of a new inlet channel on the river, as well as an extension of an existing channel, which will enhance stream hydrology and improve aquatic habitat. The $1.3 million project will also include the addition of a few slight drops and rock jetties that will form waves and pools on the river, which will be enjoyed by kayakers, paddlers, and other boaters and floaters.

These restoration and revitalization improvements to the old Climax Uranium Mill site are a shining example of the commitment of the U.S. Department of Energy Office of Legacy Management (LM) to optimize public use of a once federally owned property.

The historical Climax Uranium Mill processed uranium and vanadium from 1950-1970, producing 2.2 million tons of radioactive mill tailings. A lengthy cleanup process began in the early 1970s, and was completed in March 1997, when the property was deeded from the state of Colorado to the city of Grand Junction. In 2008, the city completed construction of the two-lane Riverside Parkway, which connected southern sections of Grand Junction, and opened the mill site property for a municipal park development.

On September 24, LM Site Manager Bill Frazier was a guest speaker at the groundbreaking of the River Park at Las Colonias, located at the former Grand Junction, Colorado, Processing Site. Frazier highlighted the history of the site and recognized the collaborative community effort behind the project. His passion came through as he spoke to his traditional Navajo upbringing and being taught to respect and appreciate the land and water.

"It gives me great pride to be affiliated with a project such as this, focused on stewardship of our lands for generations to come," said Frazier. "It's an honor for LM, but also for me personally as a resident of the Grand Junction community."

Speakers at the groundbreaking included Grand Junction Mayor Rick Taggart, and other business and community leaders, all of whom have worked in partnership with LM and the state of Colorado to bring this project to fruition. This LM beneficial reuse project has brought together a variety of community partners to provide an asset for Grand Junction.

The city paid homage to one of the early Latino communities that populated the former mill site area by naming the property Las Colonias Park. The completed park development lies within the original boundaries of the mill site and consists of a concrete-paved riverfront trail with various connecting trails, and a multi-functional outdoor amphitheater (completed in 2017), which can comfortably seat a crowd of several thousand. The River Park groundbreaking was the ceremonial kickoff for the next phase of development.

New improvements include public parks, ponds, and habitat improvement along the Colorado River, as well as a business park with a variety of retail and restaurant attractions. Construction of a zip line across the Colorado River from Eagle Rim Park will inevitably add an element of adventure to the park experience.

*Right: LM Site Manager Bill Frazier speaks at the groundbreaking of the River Park at Las Colonias in Grand Junction, Colorado. Below: Frazier, third from the right, joins city of Grand Junction officials and business and community leaders as they fill their golden shovels with dirt at the groundbreaking for the River Park at Las Colonias.*

GOAL 4

# Campus-Style Plan Revealed for New Grand Junction Office

*Two dozen people from the city, county, Riverview Technology Corporation, and LM attended an Area Development Plan charrette in which a campus-style plan was revealed for an expanded office in Grand Junction, Colorado.*

*Tania Smith Taylor, the LM director of Business director of the Business Incubator Center of the LM office expansion plans.*

The U.S. Department of Energy Office of Legacy Management (LM) identified a three-phase approach to increase workspace to meet the demands of a growing workforce in Grand Junction, Colorado:

- Phase I Fiscal Year 2020: complete planning of site infrastructure improvements and design for a new administration building.
- Phase II Fiscal Year 2021: begin construction of new administration building, and potentially the renovation and two-story addition to an existing structure known as Building 7. Complete construction of site infrastructure improvements.
- Phase III Fiscal Year 2022: complete construction of the administration building and renovated Building 7.

Bud Sokolovich, the LM Asset Management supervisor, led an Area Development Plan (ADP) charrette on August 23 to introduce the concepts of a campus-style preferred alternative and to show "extremely conceptual" renderings by site planners, Woolpert.

"We dove deeply into what we need as an organization going forward," said Sokolovich.

Architect Denise Breunig said the design intent was for a modern, polished look that ties in with the "beautiful landscape you have here."

**Charrette** *(n.)*

A meeting in which all stakeholders in a project attempt to resolve conflicts and map solutions.

The 24 ADP charrette attendees included representatives from LM, the U.S. Army Corps of Engineers, the city of Grand Junction Water Department, Mesa County Community Development, Woolpert, and Riverview Technology Corporation: an economic-development company and LM's current landlord in Grand Junction.

Tania Smith Taylor, the LM director of Business Operations, emphasized the mission-critical importance of increasing LM office space: "As we grow our mission, we have to look at our people and our space," Taylor said. "We have to make sure that our operations are efficient."

Some 300 LM and LM strategic partner staff work from leased space in Grand Junction. LM Realty Specialist Polly Robinson said full buildout would add space for more than 350 workers.

The proposed work is within the nearly 8-acre footprint of a former U.S. Army Reserve property, which transferred to LM in April 2018.

Other properties were considered before the preferred alternative to stay on the Grand Junction site, which was

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*Continued from page 20*

## Campus-Style Plan Revealed for New Grand Junction Office


*Operations, and Jon Maraschin, the executive Riverview Technology Corporation, discuss*


*Bud Sokolovich, LM Asset Management supervisor, led an Area Development Plan charrette for a new office building in Grand Junction, Colorado.*

purchased by the U.S. government in 1943 to support uranium refining for the Manhattan Engineer District's top-secret project to build atomic bombs. That effort received the code name the Manhattan Project.

Sokolovich said the campus-style preferred alternative was partly selected for its availability as a federal transfer and partly because of the history of the site.

He pointed to the on-site Atomic Legacy Cabin interpretive center, which opened in June 2019, as an important historical marker for LM in the community. The cabin served as a refinery office during the Manhattan Project and was the epicenter of the subsequent U.S. Atomic Energy Commission efforts to expand uranium mining during the Cold War.

To unify the campus, walkways and common spaces will connect the new administration building, Building 7, and the Atomic Legacy Cabin.

LM Deputy Director Peter O'Konski reiterated LM's commitment to continuing work from Grand Junction. "We've been a neighbor in Grand Junction and we're going to continue to be a neighbor," he said. ❖

## Be Environmentally Conscious

LM is continually seeking opportunities to protect the environment and conserve natural resources. One simple step we can take toward improving environmental consciousness is to distribute the *Program Update* newsletter by email instead of sending a printed copy.

Please send your email address and your first and last names to LM-ProgramUpdate@lm.doe.gov so that we can update our database.

Thank you for your assistance.

GOAL 6

# Going Pink for Breast Cancer Awareness

Breast cancer is one of the most common cancers for American women. This year, an estimated 41,760 women will die from breast cancer in the U.S.

However, it's not all bad news. Since 1990, fewer people are dying from breast cancer due to improved treatment and increased awareness, which has led to better screening and early detection.

On October 23, U.S. Department of Energy Office of Legacy Management (LM) and LM Support (LMS) employees in offices across the country did their part to raise awareness of breast cancer and support survivors by wearing pink from head to toe.

"Most of us have all been affected by this disease, whether through a loved one or a friend," said Kristen Holmes, the supervisor for the Communications, Education, and Outreach Team. "We wanted to show our support for our loved ones and friends who have battled this disease."

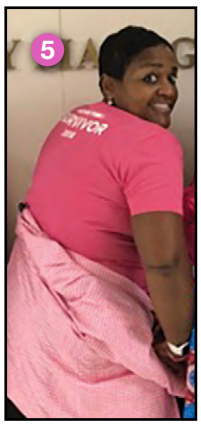
LM and LMS employees in Grand Junction also organized a bake sale, which raised $961 that was donated to the St. Mary's Medical Center STAR (Survivorship Training and Rehabilitation) Program, which helps cancer survivors in the Grand Junction community.

Thanks to all for showing your support. ❖





1. *Weldon Spring Site*
2. *Grand Junction Office*
3. *Grand Junction Office*
4. *Morgantown Office*
5. *Ingrid B. Colbert (Survivor)*
6. *LM Headquarters*
7. *Fernald Preserve*





GOAL 6

# LM Engages Community with Public Meeting and Tour of the Bluewater Site

This fall, community members near the Bluewater site outside of Grants, New Mexico, joined U.S. Department of Energy Office of Legacy Management (LM) staff for a public meeting and a tour of the former uranium mill site.

*LM Support Site Lead Alison Kuhlman leads tour participants on top of the main tailings disposal cell at the Bluewater site.*

On September 18, 2019, approximately 60 community members attended a public meeting hosted by the U.S. Nuclear Regulatory Commission (NRC) in Grants, 9 miles southeast of the Bluewater site. During the meeting, LM Site Manager Bernadette Tsosie provided an update on the site and fielded questions from the audience. Representatives from the U.S. Environmental Protection Agency and the New Mexico Environmental Department (NMED) also attended the meeting, as well as local representatives from the offices of Congresswoman Xochitl Torres Small (2nd Congressional District) and Congressman Ben Ray Lujan (3rd Congressional District). In addition to Bluewater, the meeting addressed a former uranium mill site that is currently undergoing remediation by the Homestake Mining Company and will eventually come to LM for long-term stewardship.

Tsosie began her presentation with an overview of the history of the Bluewater site, covering the years of the mill's operations from 1953-1982 as well as site reclamation by Atlantic Richfield Company in the early 1990s. She then turned to groundwater, a topic of particular interest to community members. Tsosie shared results from the recently released report *2017 Uranium Plumes in the San Andres-Glorieta and Alluvial Aquifers at the Bluewater, New Mexico, Disposal Site*. The report found that the uranium plumes have not changed significantly since the last major report in 2013, and that uranium concentrations in the groundwater at the site have remained below the established alternate concentration limits approved by the NRC, the site's regulator. Tsosie also discussed LM's Cooperative Agreement with NMED that supports sampling of off-site private wells at no cost to the owner and provides funding for an off-site well integrity report. This agreement was recently expanded to include investigation into installing two additional off-site monitoring wells.

*LM Site Manager Bernadette Tsosie updates attendees about the Bluewater site at the annual public meeting.*

Tsosie wrapped up her presentation with a discussion about depressions that LM has observed on the main tailings disposal cell at Bluewater. During monsoon season, or after major precipitation events, small ponds begin to form that eventually merge into one large pond. Tsosie expressed LM's concern that the ponding could potentially lead to erosion of the main tailings disposal cell. LM currently has a siphon system installed to address the ponding. However, Tsosie told the audience that LM is partnering with the U.S. Army Corps of Engineers to develop a long-term solution to repair the depressions on the cell. At the end of her presentation, Tsosie invited the public to join an upcoming tour of the Bluewater site.

On October 24, LM opened the Bluewater site for a public tour. Representatives from NMED and the U.S. Forest Service joined community members in braving cold winds to see the 3,300-acre site firsthand. Participants learned about LM's long-term stewardship activities as well as the geology, aquifers, and groundwater at the site. With views of Mt. Taylor and Haystack Mountain, walking on the top of the 354-acre main tailings disposal cell was a highlight of the tour.

"It's great to be able to engage with folks and answer their questions, while actually standing on the disposal cell," said LM Program Analyst Padraic Benson. ❖

# Warm Welcome for the First DOE LM Fellows from Florida International University

Two environmental engineering students from Florida International University (FIU), Olivia Bustillo and Beatriz Perasso, will soon join the U.S. Department of Energy (DOE) Office of Legacy Management (LM) as DOE Fellows. They are part of a program at FIU that shapes future candidates for the DOE workforce. As part of their fellowship, Bustillo and Perasso will learn about the challenges in long-term stewardship.

LM Director Carmelo Melendez traveled with other LM staff to FIU to welcome Bustillo and Perasso to LM during an induction ceremony for a total of 14 FIU science, technology, engineering, and math (STEM) students as the DOE Fellows Class of 2019 in early November.

This is the 13th year that graduate and undergraduate students have been selected as part of FIU's Science and Technology Workforce Development Program. For the first time, two FIU STEM students were selected as LM Fellows in addition to the twelve that will work with the DOE Office of Environmental Management (EM).

Director Melendez; David Shafer, the director of the Office of Site Operations for LM; LM Site Manager Jalena Dayvault; EM Program Manager Jean P. Pabon; and EM Senior Advisor Leonard Spearman gathered with FIU leaders at the induction ceremony for the new Fellows, who are joining the 25 Fellows already participating in the DOE program.

*(L-R) LM Site Manager Jalena Dayvault, DOE LM Fellow Olivia Bustillo, DOE LM Fellow Beatriz Perasso, and LM Director of the Office of Site Operations David Shafer.*


*LM Director Carmelo Melendez speaks to the 2019 class of DOE Fellows from Florida International University.*

On the first day of the event, Director Melendez gave an overview of the LM program and LM officials also participated in a poster competition in which the students presented their work from several DOE facilities.

On the second day, participants toured FIU's Applied Research Center laboratories, which support research focused on deactivation and decommissioning and robotics, among other areas. Director Melendez spoke at the induction ceremony later that afternoon, emphasizing strength in diversity and commitment to duty.

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## Warm Welcome for the First DOE LM Fellows from Florida International University

LM provides opportunities for the young scientists and professionals in fields such as environmental engineering, civil engineering, geology, hydrology, GIS/remote sensing, and ecology in addressing LM's long-term legacy management challenges.

"This is an impressive program that demands focus and commitment by the Fellows," said Dayvault.

Since its inception in 2007, the Fellows program has inducted 164 students. Fellows are mentored in research, development, and deployment of new technologies. They participate in 10-week summer internships at facilities across the DOE complex and present their research at the Waste Management Symposia in Phoenix and other conferences around the world.

"I want to recognize Ms. Bustillo and Ms. Perasso as the first DOE-LM fellows," said Director Melendez. "For us in LM, being part of a successful science and technology workforce development program, such as the DOE Environmental Management Fellows in FIU or an early education STEM program, is as important as protecting human health and the environment in fulfilling our legal and moral obligations associated with our atomic complex legacy. ❖


*The DOE Fellows Class of 2019 gather for a photo with participants and guests of the DOE Fellows Class of 2019 induction ceremony last week. Front row, from left, DOE Fellows Daniel Martin, Jeff Navidad, Aurelien Meray, Anilegna Nunez Abreu, Derek Gabaldon, Philip Moore, and Michael Thompson; middle row, from left, DOE Fellow Edward Nina; Marissa Morales of Oak Ridge National Laboratory; and DOE Fellows Rocio Trimino Gort, Gisselle Gutierrez, Heily Revoll Caballero, Natalie Tuya, Olivia Bustillo, and Beatriz Perasso; back row, from left, Florida International University (FIU) Associate Vice President for Research William Anderson; EM Program Manager Jean Pabón; EM Senior Advisor Leonard Spearman; FIU Applied Research Center (ARC) Director of Research and DOE Fellows Director Dr. Leo Lagos; FIU Vice President for Research Andres Gil; FIU Provost and Executive Vice President Kenneth Furton; DOE Office of Legacy Management Office of Site Operations Director David Shafer; DOE Fellows Program Project Manager Ravi Gudavalli; FIU College of Engineering Dean John Volakis; Raider Systems, Inc. Vice President for IT Ramesh Sundaresan; and FIU ARC Executive Director Inés Triay.*

# Tour Highlights Range of LM Programs in the Uravan Mineral Belt


*Left: LM staff stop in the town of Naturita to visit the refurbished historical Uranium Drive-in sign. Top right: Kyle Turley explains the history and geology of the ULP C-JD-7 open pit mine. Bottom right: The tour observes remnant pieces of uranium ore during a visit to the C-JD-7 mine.*

The Uravan Mineral Belt, which runs through western Colorado and a portion of southern Utah, was a major supplier of uranium to the Manhattan Project and the expansion of the nuclear weapons arsenal during the Cold War.

There are now approximately 1,200 abandoned uranium mines found within the belt, and several new uranium mines may open soon as a part of the Uranium Leasing Program (ULP), which is managed by the U.S. Department of Energy (DOE) Office of Legacy Management (LM).

In October, LM staff toured sites in the Uravan Mineral Belt. Taking in sites from several of the Office's programs, the tour illustrated the diversity of LM's work.

LM tour attendees included Brian Stewart (Safety and Health program manager), Bud Sokolovich (Assets Management), Kristen Holmes (Communication, Education, and Outreach supervisor), Jonathan Damiano (Quality Assurance manager), Jeanie Gueretta (Project Controls management analyst), David Shafer (Site Operations director) and Tania Smith-Taylor (Business Operations director).

The tour began just outside of Naturita, Colorado, at a former uranium mill site. Between 1993 and 1997, DOE removed approximately 793,000 cubic yards of contaminated soil and other contaminated materials from the Naturita processing site and today it is part of LM's Uranium Mill Tailings Radiation Control Act (UMTRCA) program. LM Support (LMS) Site Lead Kathy Meadows briefed the tour group on the background and planned activities for the former uranium and vanadium ore mill site. National laboratories and various universities in collaboration with LM have performed surface water, groundwater, and soil investigation studies on portions of the Naturita processing site, which has led to a broader understanding of uranium and vanadium behavior in this river alluvium.

From Naturita the tour ventured on to the C-JD-7 mine, located on one of the 31 lease tracts managed under the ULP, which leases uranium-rich land in the Uravan Mineral Belt to private companies for uranium mining while providing stringent environmental oversight. LMS ULP Field Operations Manager

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## Tour Highlights Range of LM Programs in the Uravan Mineral Belt

Kyle Turley gave an overview of the recently lifted court injunction and forecasted anticipated program activities.

While at the C-JD-7 mine, LM Director of Site Operations David Shafer pointed out that there are new applications for the vanadium content found in the ULP ore in supporting renewable energy. "For renewables, storage is the holy grail," Shafer said, speaking of vanadium. "It historically has been used to strengthen steel, but now there is research on using it for batteries, especially for storing electricity generated by wind and solar."

The tour continued to the Bitter Creek Mine, a reclaimed uranium mine. LM's Defense-Related Uranium Mines (DRUM) Program is in the midst of verifying and validating the conditions of 2,500 defense-related uranium mines on federal public land, such as the Bitter Creek Mine. LMS DRUM Field Team Lead Ian Shaffer took the group to a waste rock pile outside the abandoned mine and discussed the process for verification and validation previously conducted at the site.

*Above: Ian Shaffer discusses the historical features and the process for verification and validation at the Bitter Creek DRUM site.*
*Below: View of the UMTRCA Title 1 Naturita Disposal Site.*

Next, the group traveled to the Umetco Minerals Corporation office in Uravan to for a presentation on the history, status, and current issues facing the Uravan site. Uravan is an UMTRCA site that is scheduled to transfer from Umetco to LM for long-term stewardship in 2025.

Coming full circle, the last stop of the day brought the group to the disposal site for the former Naturita mill. Meadows discussed the current drainage features and various routine maintenance efforts made to ensure the cell continues to perform properly. Annual inspections of the disposal cell ensure it operates as designed to protect and isolate the contents to protect human health and the environment. Routine maintenance is performed on the fence and any other features that show wear or that could affect disposal cell function.

The tour showed the impact of the past operations and the reclamation possibilities. The science behind the engineering of the reclamation was evident. LM continues to incorporate the evolving science on how these sites need to be managed. As the environmental conditions change, LM has the knowledge and flexibility to adapt to the change. Getting out into the field and seeing the sites firsthand gives LM senior management the ability to be effective advocates for the specific needs at our sites.

"There's no substitute to being on the ground where the work happens," said Tania Smith Taylor. "In order to be effective in D.C., you have to get out of D.C. and see the sites and the communities that we work with." ❖

GOAL 1

# Collaboration Key to Success of the Formerly Utilized Sites Remedial Action Program

By fostering an open dialogue, joint meetings between the U.S. Army Corps of Engineers (USACE) the U.S. Department of Energy Office of Legacy Management (LM) reinforce the agencies' shared commitment to the Formerly Utilized Sites Remedial Action Program (FUSRAP) mission and provide opportunities to identify efficiencies to make the most of taxpayer dollars.

USACE hosted the Fourth Annual Joint FUSRAP Meeting in Omaha, Nebraska, on November 6-7. More than 40 representatives from agencies attended the two-day meeting.

"The fourth annual Joint FUSRAP Meeting further strengthens our collaboration and partnership of the program," said LM Team Lead Gwen Hooten. "It was a great opportunity to identify challenges in site transition and discuss how we can leverage our respective strengths."

During this year's meeting, the two organizations recognized the value of forming an Inaccessible Soil Working Group in 2020. The working group would provide LM with a better understanding of the amount of inaccessible soils that will remain at the FUSRAP sites as they transfer from USACE to LM for long-term stewardship. Having a more complete understanding of inaccessible soils will help LM to develop comprehensive risk management plans for stewardship of FUSRAP sites.

Josh Linard, the LM technical data manager, partnered with John Busse, the USACE acting chief of the Special Projects Branch, to discuss the different approaches the agencies take to manage environmental data. Michael Garret, an LM program analyst, presented on LM's management of records and information, demonstrating the Enterprise Content Management approach.

USACE provided updates on site status and transfer dates for the FUSRAP sites within the next five-year transfer window.

- The Hazelwood, Missouri, Site (currently called the Latty Avenue Properties Site by the USACE), is on schedule to transfer in fiscal year (FY) 2023.
- The Middletown, Iowa, Site and Tonawanda, New York, Landfill Site are on schedule to transfer in FY 2024.
- The Maywood, New Jersey and the St. Louis, Missouri, Site (currently called the St. Louis Downtown Site by the USACE) are on schedule to transfer in FY 2026.
- The Middlesex, New Jersey, Site; Deepwater, New Jersey, Site (formerly called the DuPont Chambers Works Site); and the Curtis Bay, Maryland, Site (formerly the W.R. Grace at Curtis Bay Site) are now operating with revised transfer schedules of FY 2025, FY 2026, and FY 2027, respectively.

Close collaboration between LM and USACE was evident in 2019 with the transfer of three FUSRAP sites from USACE to LM: the Attleboro, Massachusetts, Site; the Windsor, Connecticut, Site; and the Colonie, New York, Site. Transfer of the sites to LM as soon as they are ready for stewardship allows for LM to make the government-owned sites available for beneficial reuse and provide project stakeholders access to records through the LM website at the earliest opportunity.

LM and USACE will continue their longstanding relationship of collaboration. Plans for future visits by LM Director Carmelo Melendez to active FUSRAP sites as well as LM attendance and participation in USACE public meetings show the agencies' dedication to optimizing FUSRAP with the end goals of efficiency and effectiveness. ❖

*Left: LM Team Lead Gwen Hooten, and USACE FUSRAP National Program Manager Nicki Fatherly. Top right: Attendees at the 2019 Joint FUSRAP Meeting, November 6-7, 2019. Bottom right: Michael Garrett, LM program analyst, provides a demonstration of Enterprise Content Management.*

# LM Engages Community in Upstate New York

U.S. Department of Energy (DOE) Office of Legacy Management (LM) joined the U.S. Army Corps of Engineers (USACE, the Corps) for a public meeting and tours of the Niagara Falls Storage Site (NFSS) and Tonawanda Landfill Site on November 13-14, 2019, in upstate New York.

The two days of activities started off with Bill Kowalewski, the chief of the Special Projects Branch for the USACE Buffalo District, leading the NFSS tour. LM Program Manager Cliff Carpenter participated along with USACE Buffalo District project managers and representatives from the U.S. Environmental Protection Agency Region 2, the New York State Department of Public Health, and the New York State Department of Environmental Conservation. Effective engagement between the project managers and site regulators allows for open communication and efficient management of the site.

In the evening, the Corps hosted a public meeting, which gave Carpenter a chance to hear from the community and learn about what they would like to see happen at the site, once it comes to LM for long-term stewardship. During the meeting the Corps addressed the recently released Feasibility Study for the Balance of Plant and Groundwater Operable Units of the site and discussed the five feasibility study alternatives for the site.

Beginning in 1944, the Manhattan Engineer District used the NFSS to store radioactive residues and wastes from uranium ore processing. After the war, the U.S. Atomic Energy Commission (AEC) continued to use the site for storage of radioactive materials until 1952. In 1982, DOE began clean-up and consolidation of the radioactive wastes and residues in an earthen containment cell constructed on the property, known as the Interim Waste Containment Structure (IWCS). DOE completed construction of the IWCS in 1986.

Congress transferred responsibility for Formerly Utilized Sites Remedial Action Program (FUSRAP) site characterization and remediation to USACE in 1997. The Corps operates and maintains the NFSS to ensure the physical security and environmental integrity of the site grounds, infrastructure, buildings, and the 10-acre IWCS.

The day after the public meeting, USACE NFSS project manager Jeff Rowley led Carpenter and LM Support (LMS) staff on a tour of the Tonawanda Landfill Site. The site consists of two areas, referred to as the Landfill and the Mudflats. This allowed Carpenter and LMS team to view the Corps' ongoing remediation. The Corps' cleanup work is scheduled for completion in early 2020 and the site is anticipated to transfer to LM in 2024.

*Top: Attendees of the Niagara Falls Storage Site tour, November 13, 2019. Middle left: Ann Wei discusses future use and management of the Niagara Falls Storage Site. Middle right: Cliff Carpenter meets with First District Niagara County legislators, Irene Meyers and Amy Witryol (Left to Right). Bottom: Excavation at the Tonawanda Landfill Site, November 14, 2019.*

"DOE and the Corps share a commitment to protect human health and the environment at both the Niagara Falls Storage Site and at the Tonawanda Landfill Site," said LM Program Manager Cliff Carpenter. "We appreciate the continued partnership with the Corps. Seeing these sites and interacting with the stakeholders early in the cleanup period helps DOE prepare for its part of the mission at these sites." ❖

# Fernald Preserve Wins EPA Award for Beneficial Reuse

*Left: LM staff including Deputy Director Peter O'Konski, and Fernald Preserve Site Manager Sue Smiley, along with LM Support staff. Right: Graham Mitchell, president of Fernald Community Alliance, and Lisa Crawford, founder of FRESH, cut the celebratory cake.*

On November 5, the U.S. Department of Energy (DOE) Office of Legacy Management (LM) Fernald Preserve, Ohio, Site was honored to accept the U.S. Environmental Protection Agency (EPA) National Federal Facility Excellence in Site Reuse Award in the National Priorities List category. The award recognizes accomplishments at the Fernald Preserve in environmental education, environmental remediation, and conservation of natural resources.

An audience of 75 people from the EPA, Ohio EPA, and DOE, as well as local government officials, DOE contractors, former site workers, and community members gathered at the Fernald Preserve Visitors Center to recognize the leadership and innovation that led to the Fernald Preserve becoming a regional environmental and conservation asset.

"The U.S. Department of Energy is honored to receive this award from the EPA," said Peter O'Konski, LM deputy director. "The Fernald site has come full circle with restoration, creating one of the largest man-made wetlands in Ohio. The Fernald Preserve spans across 385 acres of native grasslands, 7 miles of accessible trails, and is now home to more than 250 bird species, bobcats, beavers and more."

"Cleaning up contaminated sites at federal facilities can serve as a catalyst for economic growth and community revitalization," said Gregory Gervais, acting director of EPA Federal Facilities Restoration and Reuse Office. "The transformation of Fernald Preserve from a Cold War legacy site to a beautiful nature preserve and interpretive visitor center is a credit to the collaborative and hard work by the Department of Energy, Ohio EPA, EPA Region 5, Fernald Residents for Environmental Safety and Health (FRESH), and the Fernald Community Alliance. Fernald Preserve is a model for future cleanup and reuse projects around the country."

From 1951 to 1989, the Fernald site was home to the large, industrial Fernald Feed Materials Production Center, which produced uranium metals for the U.S. Atomic Energy Commission and DOE, as part of the U.S. Cold War nuclear weapons complex. Following closure, extensive environmental remediation, under the Comprehensive Environmental Response, Compensation, and Liability Act, took place from 1996 to 2006. Building demolition, removal of contaminated soils, construction of the On-Site Disposal Facility, and implementation of an intricate aquifer-restoration remedy were completed by 2006, when the site transferred from the DOE Office of Environmental Management to LM for long-term surveillance, monitoring, and maintenance.

The successful collaboration of stakeholder groups at Fernald resulted in the mutually agreed upon remediation end goal of "an undeveloped park with an emphasis on wildlife to serve as a community asset." This effort is widely viewed as a success and a myriad of Fernald site stakeholders, including regulators, contractors, and the community at large, were a major part of the success story.

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## Fernald Preserve Wins EPA Award for Beneficial Reuse

"What a well-deserved honor," said Lisa Crawford, former Fernald Citizens Advisory board member and long-time FRESH president. "The Fernald Preserve has come a very long way and became a wonderful community asset to the Fernald community. Many years later, the commitment from Ohio EPA, EPA, and our government officials working together has made this happen. We, as a community, value the rebirth of this site."

Since the opening of the Visitors Center in 2008, interpretive services personnel have served more than 128,000 members of the community, through the Fernald Experience exhibit hall, community meeting spaces, and other programs related to the historical and natural resources protected at the Fernald Preserve.

Beneficial reuse is at the heart of Fernald Preserve, which includes hundreds of acres of restored prairies, wetlands, forest, hiking trails, and wildlife watching opportunities, as well as an interpretive center that is platinum certified by Leadership in Energy and Environmental Design, signifying the highest possible industry standard for cost and energy efficiency.

Recent accolades for the site include a 2017 regional conservation commendation by the Garden Club of America, a national leader in the fields of horticulture, conservation, and civic improvement. In 2018, the Fernald Preserve was named a regional "Greenspace Gem" by Green Umbrella, a Cincinnati-based regional environmental sustainability alliance. In that same year, Fernald Preserve staff also accepted the Butler County Soil and Water Conservation District's "Conservation Educator of the Year" award.

LM sites serve as national models of excellence in environmental remediation, environmental education, and conservation of natural resources. The Fernald Preserve and the stakeholders in support of it are landmark examples of the incredible change that can happen with community collaboration and dedication. ❖

*Left: Bud Sokolovich (LM), Polly Robinson (LM), and Brian Zimmerman (LM) in the lobby of the Fernald Preserve Interpretive Center. Below: Fernald Preserve was transformed from a Cold War legacy site to a nature preserve enjoyed by thousands every year.*

GOAL 6

# Combined Federal Campaign Offers Opportunity to Give Back


*LM Director Carmelo Melendez shows his support for the 2019 Combined Federal Campaign.*

The Combined Federal Campaign (CFC) is the annual opportunity for members of the federal community to support charities they care about through monetary and volunteer contributions. It is an employee-focused, cost-efficient, federally regulated program aimed at raising much needed funds for participating charities.

CFC is one of the world's largest and most successful annual workplace charity campaigns, raising millions of dollars each year. Members of the federal community are invited to participate in the CFC. This includes civilian federal employees, active duty military members, and U.S. Postal Service employees.

Donations made during the campaign season will support eligible non-profit organizations that provide health and human service benefits throughout the world.

The official solicitation period for pledges for the 2019 CFC campaign is September 9, 2019, through January 12, 2020. If the pledge period has passed, you can give back by volunteering to help during the 2020 campaign season. For more information go to https://www.opm.gov/combined-federal-campaign/. ❖

GOAL 6

# National Park Foundation Seeks Support for the Manhattan Project National Historical Park

During this giving season, consider a charitable donation to the Manhattan Project National Historical Park (MAPR). The National Park Foundation, the official charitable partner of the National Park Service, can accept donations designated for MAPR.

To make a tax-deductible, charitable contribution to MAPR, donations specified for MAPR will need to be made by check with "Manhattan Project NHP" included in the comment line. Checks can be mailed to National Park Foundation, 1110 Vermont Ave, NW Suite 200, Washington, DC 20005.

The Manhattan Project was a massive, national mobilization charged with producing a deployable atomic weapon during World War II. Coordinated by the U.S. Army Manhattan Engineer District, Manhattan Project activities were dispersed to numerous locations across the United States. Established November 10, 2015, MAPR is managed through a collaborative partnership by the U.S. National Park Service (NPS) and the U.S. Department of Energy (DOE) to preserve, interpret, and facilitate access to key historical resources associated with the Manhattan Project. The two agencies collaborate to tell the complete story of the Manhattan Project and its legacy. In November 2016, DOE made its Office of Legacy Management (LM) responsible for coordinating among the DOE program offices that are implementing the MAPR mission.

"We've been there for just over four years — barely a toddler at this stage — but we've accomplished a lot," said LM MAPR Program Manager Tracy Atkins.

MAPR incorporates three of the most significant Manhattan Project sites: Oak Ridge, Tennessee; Los Alamos, New Mexico; and Hanford, Washington.

For more on the Manhattan Project, including multimedia, please visit https://www.energy.gov/manhattanproject. ❖


*LM Deputy Director Peter O'Konski donates to the National Park Foundation for the Manhattan Project National Historical Park.*

GOAL 6

# The Year in Review for Legacy Management

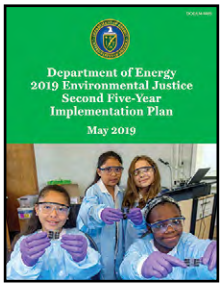
2019 was a year of historic firsts and milestones for the U.S. Department of Energy (DOE) Office of Legacy Management (LM).

The agency assumed responsibility for its 100th site (Colonie, New York, Site) and achieved the first unconditional closure of a portion of a legacy site (the 4.5 Acre Site at the Pinellas County, Florida, Site). LM also received an award recognizing the Office's work on beneficial reuse at the Fernald Preserve site in Ohio and looked to the future with the construction of a new interpretive center at the Weldon Spring, Missouri, Site.

The Uranium Leasing Program (ULP) resumed activities after a long-standing injunction against DOE and LM, which was lifted on March 18. The ULP facilitated the completion of a Programmatic Environmental Impact Statement that resulted in a Record of Decision that satisfied the requirements established by the U.S. District Court for the District of Colorado. All renewed leases for these mining tracts will require a detailed environmental assessment of the impacts of future mining on the area to ensure protection of air, water, wildlife, and cultural resources with a renewed emphasis on safety. ULP manages 31 lease tracts covering approximately 25,000 acres in the Uravan Mineral Belt in southwestern Colorado.

*Wild Steer Mine overview, Jo Dandy District, Colorado, BLM-administered land.*

In May 2019, DOE proudly released the *2019 Environmental Justice Second Five-Year Implementation Plan*. This second plan demonstrates the commitment to environmental justice (EJ) as a principle of American democracy that combines civil rights with environmental protection. DOE is committed to EJ and continues to give community groups the tools they need to participate more effectively in environmental decision-making.




LM and the U.S. Army Corps of Engineers St. Louis District celebrated the beginning of construction on a new interpretive center and administrative office space at the Weldon Spring site on May 9. The new interpretive center will replace the existing Weldon Spring Site Interpretive Center, which opened to the public in 2002.

On June 6, LM hosted a ribbon-cutting ceremony for the Atomic Legacy Cabin, a new interpretive center located at the DOE Grand Junction, Colorado, office. The cabin once was the epicenter of the nationwide search for uranium that was started by the Manhattan Project and later escalated during the Cold War. The historic nature of the site, which is listed on the National Register of Historic Places, was a consistent theme during the event.

The Secretary of Energy was asked to testify before the Senate Committee on Indian Affairs Field Hearing regarding: America's Nuclear Past: Examining the Effects of Radiation in Indian Country at the Southwestern Indian Polytechnic Institute in Albuquerque, New Mexico, on September 6. LM Deputy Director Peter O'Konski attended in his place.

When LM was established in 2003, it became responsible for 33 sites where environmental remediation of sites impacted by nuclear weapons production during World War II and the Cold War was complete. On October 15, 2019, LM marked a major milestone when the 100th legacy site was added to its program. The transfer of the Colonie, New York, Site to LM reflects the sustained progress by DOE in managing the long-term responsibilities associated with legacy sites.

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## The Year in Review for Legacy Management

On November 5, the Fernald Preserve, Ohio, Site accepted the U.S. Environmental Protection Agency National Federal Facility Excellence in Site Reuse Award in the National Priorities List category. The award recognizes accomplishments at the Fernald Preserve in environmental education, environmental remediation, and conservation of natural resources.


*Mound Cold War Discovery Center.*

On November 5, the Mound Development Corporation, a non-profit community development arm of the city of Miamisburg, hosted a celebration at the Mound, Ohio, Site in Miamisburg. The event, held at the Mound Cold War Discovery Center, celebrated the completion of property transfers from LM to the Mound Development Corporation for beneficial reuse. The celebration recognized the achievements and cooperation of government and private entities in transitioning the 306-acre former weapons and research facility within the Miamisburg city limits into an attractive, successful business site.

LM announced the unconditional closure of a unit of its Pinellas County, Florida, Site in November. The closure order, issued by the Florida Department of Environmental Protection, specifies that DOE no longer has any responsibilities for the unit, known as the 4.5 Acre Site, and that the landowner has full and unrestricted use of the property. The unconditional closure is a first for an LM site.


*Pinellas County, Florida site.*

Another important occurrence in November happened at Florida International University (FIU) in a program that helps shape future candidates for the DOE workforce. This year, fourteen STEM students were inducted as the DOE Fellows Class of 2019. Under a new initiative this year, two FIU STEM students were selected as LM Fellows. The other twelve DOE Fellows will work with the DOE Office of Environmental Management. Olivia Bustillo and Beatriz Perasso, environmental engineering students at FIU, were selected as the first DOE LM fellows. As part of their fellowship, Bustillo and Perasso will learn about the challenges in the area of long-term stewardship.

During the past year, LM and LM Support staff have risen to the challenge of the increased responsibilities and opportunities associated with an expanded portfolio of sites under the Office's management. The coming year will likely see new challenges, and the workforce remains committed to the mission of managing legacy sites for protection of human health and environment.

All of DOE's program offices have compiled an impressive list of accomplishments in 2019. To see a list of just a few of these achievements, follow the link here: https://www.energy.gov/articles/department-energy-year-review-2019. ❖

# THE NATIONAL ENVIRONMENTAL JUSTICE CONFERENCE AND TRAINING PROGRAM, AND THE 13TH NATIONAL CONFERENCE ON HEALTH DISPARITIES


April 22-25, 2020 | Hilton Washington, DC, National Mall | Washington, DC | https://thenejc.org/

GOAL 6

## Environmental Justice Activities

### MES Program Visits Historically Black Colleges and Universities

The Mentorship for Environmental Scholars (MES) Program, whose mission is to provide traditionally underrepresented students with exposure to research in STEM, business administration, and other U.S. Department of Energy (DOE)-related fields, has been taking the program directly to the campuses of Historically Black Colleges and Universities (HBCU). Beginning with the launch of this year's online application, Pre-College University, Inc. (PCU), the organization that manages the MES Program, has been traveling and sharing information on the DOE, the Office of Legacy Management, and the internship program.

To date, PCU has visited 25 HBCUs in Pennsylvania, Virginia, North Carolina, South Carolina, Alabama, Florida, and Arkansas. The visits were initiated by requests from former MES interns and expanded from there. The goal is to provide information about the internship program, and to help students prepare successful applications. Campus visits can be as simple as


*Pre-College University Executive Director Clarence Brown recruiting students at Lincoln University, Pennsylvania.*

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## Environmental Justice Activities

*Pre-College University Executive Director Clarence Brown with students at the University of Arkansas, Pine Bluff.*

stopping in the career services department or faculty offices, to holding workshops for individual classes. As a result, PCU has seen an increase in early and completed applications, as well as new applications from schools not previously represented in the applicant pool.

The application deadline for the Mentorship for Environmental Scholars internship is January 10, 2020. For more information on the program and to see a list of participating laboratories, please visit: http://www.precollegeuniversity.com/mentorship-%20environmental-scholars.php or contact program management at info@precollegeuniversity.com. ❖

### SRS Museum Shares Stories of Residents Displaced for Nuclear Facility

The Savannah River Site (SRS) Museum celebrated its reopening on October 30, with "6,000 Stories," a new permanent exhibit fully funded by DOE's Office of Legacy Management that shares the accounts of individuals displaced almost 70 years ago to make way for the former nuclear weapons material production site that is now SRS.

The interactive exhibit allows museum guests to dig deep into the history of Ellenton, Dunbarton, and other towns lost to the 310-square-mile site and listen to stories directly from the displaced residents.

Patrons of the museum in downtown Aiken also can access a new cemetery database to find relocated gravesites of displaced residents.

"The exhibit goes a long way in bridging the gap between the public and the site by preserving the rich history of the area in a publicly accessible location," said Lauren Miller, the museum's director.

At the museum reopening, former residents, community members, and site employees reminisced about life before the establishment of the then-called Savannah River Plant. They shared stories, reconnected with old friends, and celebrated the preservation of this important period in U.S. history.

Using oral history interviews, historic photographs, documents, and objects, the exhibit highlights both the displacement and how these individuals adapted to their new circumstances. The life paths of rural families, property owners and non-property owners, and in particular those of color, have not been adequately interpreted despite their numbers in the affected populations. For some, particularly the elderly, it was a difficult and heart-rending experience.

The museum plans to introduce additional museum exhibits in the future, along with a year of programming and events to mark the 70-year anniversary of SRS next year.

"The museum hopes to continue honoring the history of the Savannah River Site, this region that has sacrificed for it, and this proud community that has sustained it," Miller said. "Oh, the stories we'll tell."

Earlier this year, museum officials unveiled a new gallery displaying the site's historic and ongoing role in environmental stewardship as well as a companion interpretive trail at the historic townsite of Ellenton.

Material used for this article courtesy of the DOE Office of Environmental Management ❖


*The Savannah River Site Museum's reopening and unveiling of the new "6,000 Stories" exhibit brought together former residents, community leaders, and site employees to celebrate the preservation of an important part of the area's history.*

GOAL 1

# U.S. Army Corps Kicks Off Project Planning at Two New Mexico Sites

In November, the U.S. Department of Energy Office of Legacy Management (LM) took the U.S. Army Corps of Engineers (USACE, the Corps) out to the L-Bar and Bluewater sites in New Mexico to kickoff major construction projects.

Access to corps resources via a nationwide nine-year Memorandum of Agreement (MOA) is helping accelerate the pace of project execution at L-Bar and Bluewater. In 2018, LM and USACE signed an MOA to allow LM to supplement our support services contract by utilizing interagency agreements with the Corps to receive commercial goods or services conveniently and cheaply. The MOA has enabled LM to better leverage nationwide assets available throughout the multiple Corps districts and offices.

LM site managers William Frazier and Bernadette Tsosie as well as LM and LM Support staff attended the site tours with USACE.

The aim of the visit was to initiate a new interagency agreement under the nationwide MOA for USACE to perform engineering services to address erosion issues at the L-Bar site, located 10 miles north of Laguna Pueblo and surface cell depressions at the Bluewater site, located 12 miles northwest of the city of Grants. During meetings and field visits, USACE engineers and managers worked to determine the scope of work for the two projects.

*LM and the Corps discuss the cell depressions at the Bluewater site.*

GOAL 6

# LM NEWS Feed

Visit https://energy.gov/lm/listings/lm-news to access these articles in the LM NEWS Feed.

NOVEMBER 25, 2019

### Public Opportunity to Comment on Grazing Activities at LM Sites

LM issued a draft final Programmatic Environmental Assessment to evaluate grazing activities. A 30-day public comment period will end Dec. 31, 2019.

NOVEMBER 22, 2019

### LM Achieves Unconditional Closure of a Unit of the Pinellas County Site

LM announced the unconditional closure of a unit of its Pinellas County, Florida, Site.

NOVEMBER 5, 2019

### SRS Museum Shares Stories of Residents Displaced for Nuclear Facility

LM issued a draft final Programmatic Environmental Assessment to evaluate grazing activities. A 30-day public comment period will end Dec. 31, 2019.

OCTOBER 31, 2019

### Recruiting and Outreach at the Nation's Largest American Indian College and Career Fair

LM joined more than 2,000 people at the National American Indian Science and Engineering Society (AISES) Conference.

OCTOBER 21, 2019

### Renewed Uranium Leases Come with Stricter Environmental Standards

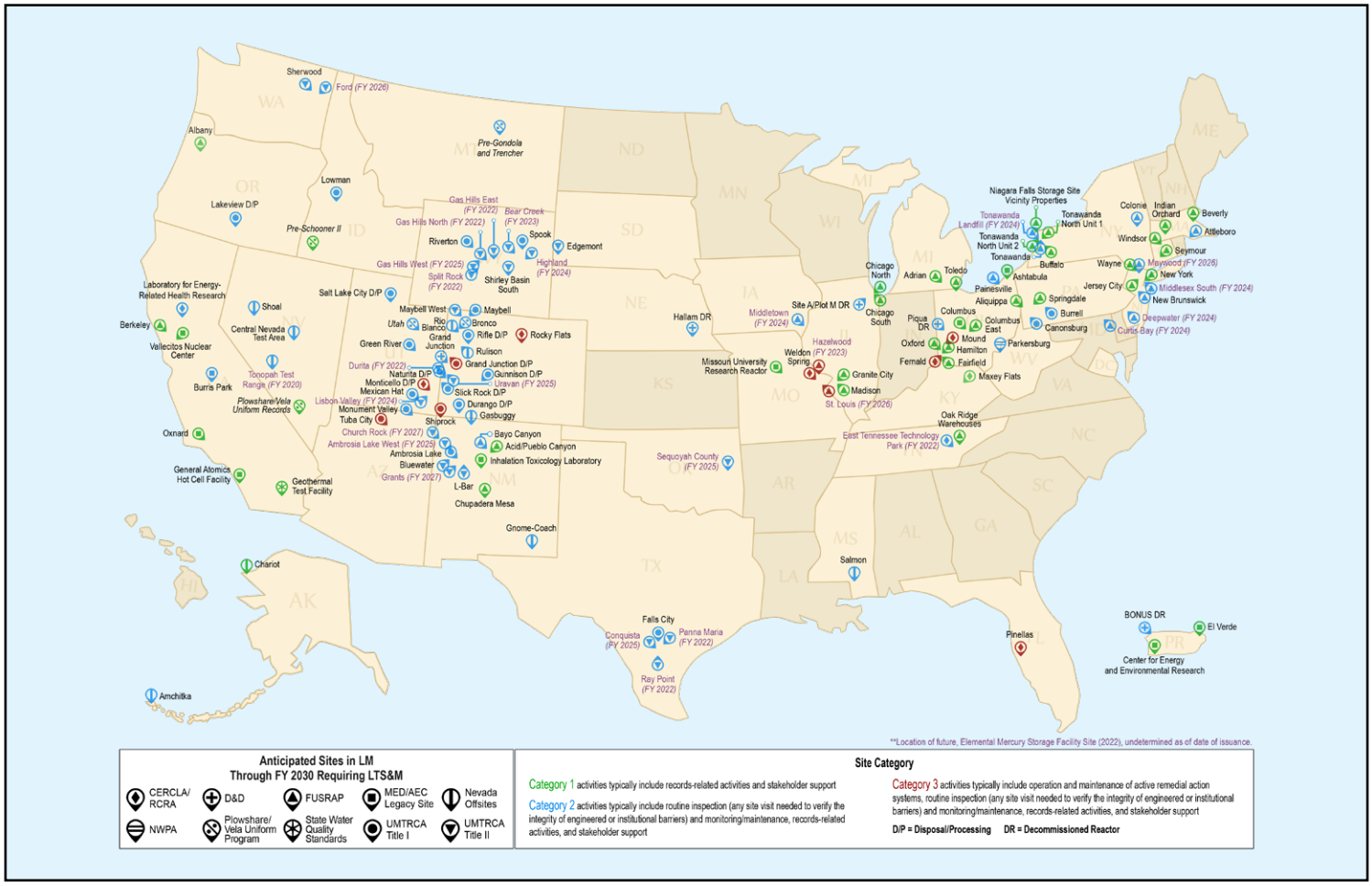
U.S. Department of Energy (DOE) is restarting a uranium mining program with more stringent environmental standards.

OCTOBER 7, 2019

### ASER Report Released

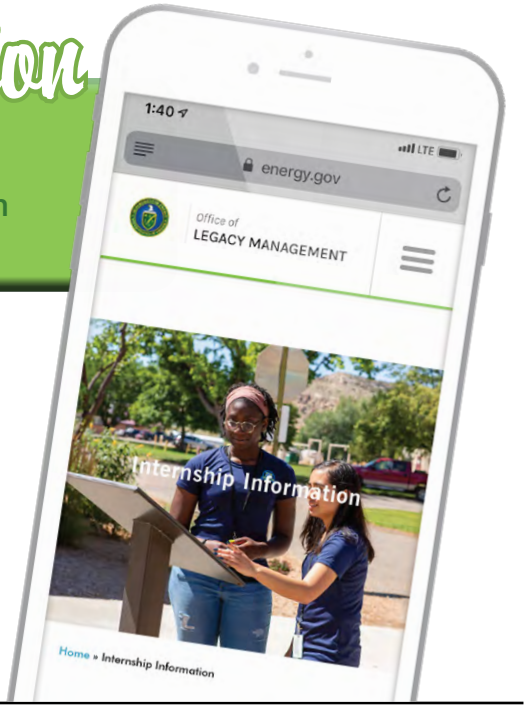
LM released its Annual Site Environmental Report (ASER) for Calendar Year 2018.

# Anticipated LM Sites Through Fiscal Year 2030




## Internship Information

Check out our internship information webpage at
https://www.energy.gov/lm/internship-information




## Stay Up-To-Date

For up-to-date LM news, be sure to visit
LM's website and LinkedIn page.

U.S. DEPARTMENT OF ENERGY | Legacy Management
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