



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

Program Update

July–September 2017

Welcome to the July–September 2017 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@hq.doe.gov.



Visitors anticipate eclipse totality.



Goals 4 and 6

Weldon Spring Site Hosts Total Solar Eclipse Public Viewing

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) Weldon Spring Site near St. Louis, Missouri, hosted “Total Solar Eclipse at the Cell” on August 21, 2017. The event was free to the public. Visitors received eclipse viewing glasses to safely enjoy their excellent views of the phenomenon, with approximately one minute and 20 seconds of totality. They also had access to the National Aeronautics and Space Administration’s livestream coverage of the eclipse, as well as picnic areas and activities for children. The site was one of the few LM sites within the path of totality and the only public-use site open to visitors during the eclipse.

The Weldon Spring Site is home to a 41-acre on-site disposal cell that was constructed to isolate waste generated from a former World War II TNT/DNT production plant and Cold War–era uranium refining factory. Remediation occurred from the mid-1980s through 2001, with the site opening to the public in 2002. The site is home to DOE’s first interpretive center to open after remediation. This public viewing event is an example of beneficial reuse of a former site.

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Director’s Corner



Be sure to read the Director’s Corner on page 2!

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Goals 5 and 6

Director's Corner – Puerto Rico Hurricane Work



Director's Corner

Dear LM *Program Update* Readers,

Recent weather events have placed many Americans in harm's way, and you've likely seen in news reports that Puerto Rico is suffering the effects of two back-to-back hurricanes. As some of you know, I was born in Puerto Rico and have many friends and family on the island. I've been in touch with my family and they tell me they're safe and sound but dealing with a shortage of basic necessities, like others affected by the storms. They're still without power, but their water has been restored. Its times like these when we should come together, as a family and as a country, to help out in whatever way we can.

Shortly after Hurricane Irma hit Puerto Rico, I received a request from the U.S. Department of Energy (DOE) to assist with the recovery effort. Since I have experience and training in critical infrastructure assessments and restorations during natural disasters, colleagues recommended me for the relief effort. Like many of you, I was saddened seeing video clips of the destruction on the news. I was compelled to act.

I was in Puerto Rico for two weeks, during which time I assisted the Federal Emergency Management Agency (FEMA) Caribbean operations center as part of the Emergency Support Function–12. The purpose of my assignment was to help ensure a secure and reliable flow of energy to the island, and apply DOE's technical expertise to help ensure the security, resiliency, and survivability of key energy assets and critical energy infrastructure. While there, I worked with the FEMA coordination center and the Puerto Rico Electric Power Authority (PREPA) to determine the assistance required for restoring and maintaining electrical generation, transmission, and distribution to over 1.5 million delivery points servicing more than 3.5 million people.



Loiza, Puerto Rico, September 21, 2017. People in the community of Miñi Miñi wait for the water to recede. The municipality of Loíza, as well as the rest of Puerto Rico, was severely affected by category 4 Hurricane Maria. Photo: Yuisa Rios/FEMA

Our mission was successful, and I was pleased to be able to provide assistance with analyzing the damaged electrical system and identifying priorities for restoration, using FEMA and PREPA resources as well as those of DOE and other power authorities. Unfortunately, Hurricane Maria hit the island after I left, and the devastation was even greater. DOE has asked me to remain involved in coordinating electrical restoration with the U.S. Army Corps of Engineers. I've also been asked to rotate back to Puerto Rico to help the FEMA Caribbean operations center with their restoration work.

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Director's Corner – Puerto Rico Hurricane Work

In addition to my efforts on behalf of DOE, the Office of Legacy Management has responsibilities on the island at the decommissioned Boiling Nuclear Superheater (BONUS) reactor, located northwest of Rincón, Puerto Rico. The small-scale nuclear reactor facility operated at the BONUS site in the 1960s and is now a historical museum, open to the public.

The BONUS site was not significantly impacted by the winds and storm surge from Hurricane Irma and we have arranged for another inspection of the site as soon as it is safe to do so. Although we haven't had a visual inspection since Hurricane Maria hit the island, we don't expect there was significant impact because the reactor facility was designed to withstand wind velocities up to 150 miles per hour, and the earthen embankment around the enclosed domed building makes the effective ground level approximately 40 feet above sea level.

The people of Puerto Rico have never experienced anything like the devastation of the past month and I, along with many other relief volunteers from LM, am happy to use my experience and education to help where needed. Be assured that LM's management team is assessing the best way to continue the office's mission during staff deployment.

Volunteering to assist others is one of the most rewarding and meaningful things you can do. Stay strong and keep those affected in your thoughts.

Very respectfully,
Carmelo



Loiza, Puerto Rico, September 21, 2017. The community of Miñi Miñi flooded after the Carraizo Dam released water, due to the overflow brought by Hurricane Maria. The category 4 hurricane tore through Puerto Rico on September 20, 2017. Photo: Yuisa Rios/FEMA



Soldiers partner with FEMA urban search and rescue teams to deliver food and water to Puerto Rico residents isolated by Hurricane Maria damage. Photo: U.S. Army North



Goal 4

Beneficial Reuse at the Weldon Spring Site



Butterfly-catching event at Weldon Spring Site.

Upon visiting the Weldon Spring Site in St. Charles, Missouri, it doesn't take long to see the positive impacts that a restored site can have on the local community and surrounding area. It's common to see several cars in the parking lot and a steady stream of mountain bikers riding the site's Hamburg Trail while taking in nature's beauty. People can also be seen visiting the site's Interpretive Center and walking to the top of the disposal cell for one of the most spectacular views in St. Charles County. What was

once viewed by the public as a run-down, contaminated processing plant has been revitalized for beneficial reuse as a community educational center and recreational site.

The site has a rich and complex history, including major contributions to World War II and the Cold War. From the early to mid-1940s, the U.S. government acquired more than 17,000 acres for the U.S. Army to operate a plant that produced 750 million tons of explosives to support the country's efforts during World War II. In the mid-1950s, more than 200 acres of the former ordnance works property were transferred to the U.S. Atomic Energy Commission for construction of a plant to process uranium in support of the Cold War.

After the plant closed in 1967, the site remained largely dormant under caretaker status for nearly two decades until remediation work began. Site cleanup resulted in a 41-acre disposal cell surrounded by 150 acres of restored native prairie collectively known today as the Weldon Spring Site. As part of a long-term surveillance and maintenance process, the U.S. Department of Energy Office of Legacy Management (LM) operates the Interpretive Center to communicate the historical legacy of the site, provide educational and research opportunities, and share current information with the public. Much of the surrounding former U.S. Army land is now owned and operated by the Missouri Department of Conservation (MDC).

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Prairie blazing star.



Gray-headed coneflower.



Southern blue flag iris.



Goal 5

LM Issues High Performing Organization Plan

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) has completed a high performing organization (HPO) plan for fiscal year (FY) 2017 through FY 2021. This internal planning document identifies management excellence and program performance goals LM will strive to meet over the next five years. The plan includes a summary of LM's performance in meeting HPO goals and milestones that were set in May 2012, when the office published its HPO proposal for FY 2012 through FY 2016.

LM met entirely, or partially, 35 of the 40 goals and milestones in its previous proposal. A noteworthy program performance goal for its second HPO included doubling the number of LM sites in beneficial reuse. A critical management excellence goal was maintaining a safety record better than the DOE average, which LM met four out of five years. LM also continued to achieve an important annual efficiency goal to reduce the cost of long-term surveillance and maintenance (LTS&M) at its sites by 2 percent or more per year.

Reducing the groundwater, surface water, sediment, and direct-radiation environmental monitoring programs, as well as leachate monitoring at the On-Site Disposal Facility, while maintaining environmental surveillance at appropriate levels—with U.S. Environmental Protection Agency (EPA) approval—at the Fernald Preserve in Ohio, are examples of LTS&M cost savings implemented in January 2017. The reductions in the monitoring programs were also approved by Ohio EPA and had support of Fernald Community Alliance members. These actions will save LM approximately \$88,500 annually through FY 2025.



On-Site Disposal Facility valve houses seen behind restored habitat at the Fernald Preserve.

More than a decade ago, LM conducted a two-year review to streamline its organization. The review used the tools and techniques in the Office of Management and Budget (OMB) Circular A-76, *Performance of Commercial Activities*, and the high performance organization principles contained in the U.S. Government Accountability Office Commercial Activities Panel report. As part of the process, LM documented management excellence and program performance goals in an HPO proposal that resulted in a finely tuned organization with better-defined mission objectives and program efficiencies. As a result, in 2007 OMB designated LM as the second HPO organization in the federal government. LM's first HPO proposal covered FY 2007 through FY 2011 and its second covered FY 2012 through FY 2016.

An important distinction between the FY 2017 through FY 2021 HPO document and the previous two is that the new HPO is a plan rather than a proposal. Although LM provided a copy of the plan to OMB, OMB no longer formally recognizes an HPO designation. However, LM Director Carmelo Melendez still sees value in maintaining HPO standards. "Continuing to use HPO tools and striving to perform as an HPO is a valuable means for LM to identify ways of being more effective and efficient, and hold ourselves accountable for major program accomplishments," Melendez stated.

Another distinction between this HPO and the previous ones are new, ambitious performance goals related to two of LM's most recent responsibilities. One responsibility is a program to verify and validate defense-related uranium mine sites (also known as DRUM sites). This initiative grew out of a 2014 Report to Congress on DRUM sites. The other responsibility is to provide greater public access to features at the three DOE sites that comprise the Manhattan Project National Historical Park. LM serves as the DOE liaison to the U.S. National Park Service and is transitioning into management, operations, maintenance, and preservation activities at the park in coordination with other DOE organizations.

Because the 2007 HPO proposal was essentially a performance contract with OMB, LM reported progress toward meeting its goals using Post Competition Accountability Reports (PCAR). LM will continue to prepare PCAR as an internal controls tool. Each PCAR for the FY 2017 through FY 2021 HPO plan will be posted at <https://energy.gov/lm/program-information/lm-annual-post-competition-accountability-reports>. ❖



Goals 1 and 6

Fernald Preserve Commended for Conservation

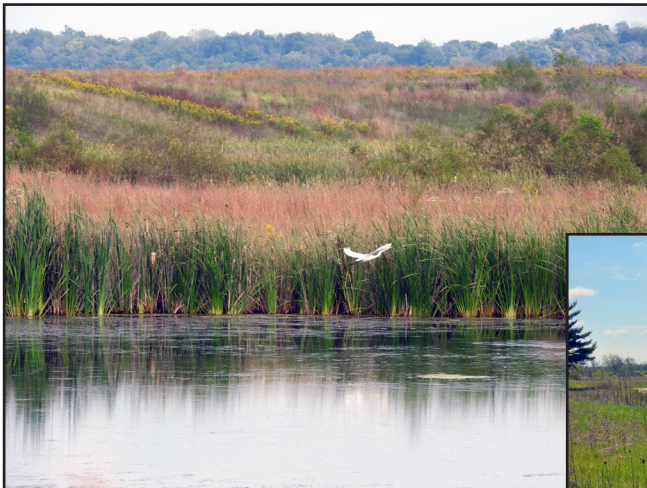


On June 14, 2017, the Fernald Preserve, Ohio, Site received a Zone Conservation Commendation from The Garden Club of America (GCA) for its “ecological restoration and successful transformation of the Fernald nuclear weapons site into a nature preserve, habitat, and safe haven for wildlife.” The GCA’s regional conservation commendation is presented to individuals or organizations that have made

significant contributions to conservation. Composed of Ohio, Indiana, and Michigan, GCA Zone 10 presented the commendation to Fernald Preserve staff at its annual banquet.

Founded in 1913, GCA is a volunteer, nonprofit organization with 200 clubs and approximately 18,000 members throughout the country. The club’s strong conservation focus includes stimulating knowledge and love of gardening; reaching out by means of educational meetings, conferences, and publications; and restoring, improving, and protecting the quality of the environment through educational programs and action in the fields of conservation and civic improvement.

Evidence of Fernald Preserve’s environmental conservation successes can be seen in the 245 bird species that have been observed since the preserve opened to the public in 2008. The preserve also supports a diverse community of wetland wildlife and robust resident mammal populations, including bobcats. Ecological restoration at the 1,050-acre site has established and improved regionally significant habitats. A 7-mile network of walking trails crisscrosses acres of grassland, including tallgrass prairie, wet prairie, savanna, mud flats, open water, swamp forest, upland forest, a lengthy riparian corridor, and one of the largest human-made wetlands in Ohio. ❖



Fernald Preserve, Ohio, Site.



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Goal 6

Fernald Preserve Hosts International Educators and Students

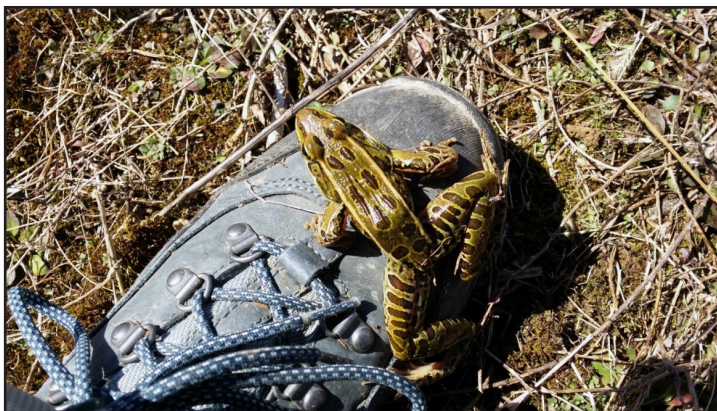
A class of multilingual high school students visited the Fernald Preserve, Ohio, Site on July 19, 2017, as part of a week-long science, technology, engineering, and mathematics (STEM) camp. Students learned about microbiology, genetics, chemistry, physics, environmental science, STEM careers, and more during the course of this annual summer program. The program was organized by the Greenacres Water Quality Project, Northern Kentucky University Latino Institute for Excellence and Department of Biology, and Foundation for Ohio River Education. Participating students speak English as a second language and must be recommended by a science teacher or counselor to apply for the camp.

The field trip to the Fernald Preserve was observed by an international delegation of educators sponsored by the U.S. Department of State and the Greater Cincinnati World Affairs Council. This group is working to develop lesson plans with hands-on activities, camp management strategies, and increased understanding of United States cultural and democratic values. Teachers came from Bahrain, Brazil, Japan, Kazakhstan, Philippines, Russia, Turkey, and other countries around the world. One of the participants commented that they “liked the idea of life-experience based education.”

The exhibits inside the Fernald Preserve Visitors Center provided students the opportunity to learn about the agricultural, industrial, and remediation history of the land. While hiking along the preserve’s 7 miles of trails they learned about the ecological restoration work that followed extensive environmental remediation at the site. They used dip nets and observation trays at a wetland area that now thrives where a man-made structure once existed. The visit concluded with students creating their own aquifer of “contaminated” groundwater in the classroom to better understand the pump-and-treat approach that is currently being used to finalize groundwater remediation at the site. The students were exceptionally inquisitive and perceptive about environmental issues. They are working their way toward becoming the next generation of environmental STEM leaders. LM is committed to promoting STEM outreach in local communities. ❖



Students discussed methods used to clean contaminated groundwater using model “extraction wells” they constructed.



Participants learned about wetlands wildlife, such as this leopard frog found at the Fernald Preserve.



Goals 4 and 6

Amphitheater Opens on Former Uranium Mill Site

Dignitaries in Grand Junction, Colorado, cut the ceremonial ribbon on July 6, 2017, at a new city park amphitheater, built on the site of a former uranium mill that once operated along the Colorado River.

“Reuse demonstrates we can work together as a team,” said Dr. April Gil, manager of the U.S. Department of Energy (DOE) Office of Legacy Management (LM) office in Grand Junction. “Beneficial reuse of this property will ensure it is cared for and protected for generations to come.”

During the ceremony, Gil acknowledged the collaborative efforts of the City of Grand Junction, Colorado Department of Public Health and Environment, LM site managers Bill Dam and Bill Frazier, and Navarro Research and Engineering Inc. contractor Gary Baur. Las Colonias Park Amphitheater boasts 13 funding partners, including DOE and Navarro.

The name Las Colonias is Spanish for “the colonies” and refers to the neighborhood of sugar beet farm workers who lived and worked in the area in the early 20th century. In 1950, the Climax Uranium Company converted a closed beet sugar factory on the site to a vanadium and uranium mill.

The mill eventually qualified for remedial action under Title I of the Uranium Mill Tailings Radiation Control Act of 1978. Surface remediation of the mill site and more than 4,000 nearby contaminated properties began in the mid-1980s and was completed in 1998. Contaminated materials were sent to the Grand Junction disposal site. LM and the City of Grand Junction have developed restrictions on property use to protect the public from the residual groundwater contamination that remains. The site transferred from the State of Colorado to the city in 1997.

The amphitheater is the newest feature of the 130-acre, multi-use Las Colonias Park, which includes an 18-hole disc golf course, a native arboretum, and a playground. The amphitheater consists of 66,000 square feet of sloped lawn seating, stage-front concert seating for 400, and a large covered stage. The structure is 1 mile from downtown Grand Junction, and adjacent to a riverfront trail that spans 21 miles along the Colorado River. ❖



Dr. April Gil (second from left), manager of the Grand Junction LM office, participates in the ribbon cutting celebration for the Las Colonias Park Amphitheater.





Goal 4

LM's Environmental Management System Prioritizes Goals for Minimizing Waste

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) periodically evaluates office and field activities for their potential impacts on the environment, and identifies those aspects that could have a significant impact if we do not prevent or mitigate them. Environmental aspects are the attributes of project and program activities, products, and services that interact with the environment. "Aspects" are equivalent to the concept of "hazards" in safety, but they can be either negative or positive. Information from our aspects evaluations is used to develop programs and procedures to prevent or mitigate potential impacts and to establish prioritized goals for our environmental management system (EMS).

LM has four environmental aspects that we consider significant:

- **Waste Generation and Minimization** – Waste is generated from our operations. Potential wastes include solid, universal, electronic, hazardous, toxic, and radioactive, which LM manages in accordance with the Waste Minimization Hierarchy. All potential waste is managed in compliance with applicable regulatory requirements. LM conducts pollution prevention opportunity assessments to identify and implement activities that reduce waste, and has a comprehensive recycling program.
- **Resource Consumption, Use, and Storage** – Natural resources are diminished by using products, such as

paper, diesel fuel, and gasoline, and purchasing utilities such as water, electricity, and natural gas. LM implements multiple plans to minimize the use of resources. These include a Fleet Management Plan that identifies ways to reduce use, such as a no-idling policy, when practicable; operations and maintenance plans to help control electronic settings on printers and computers; HVAC (heating, ventilation, and air conditioning) setbacks; and electronic-power management techniques. Additionally, LM minimizes storage and use of materials, such as petroleum products, that may pose risks to the environment.

- **Releases to the Environment** – In accordance with federal and state regulations, operations at several sites permit release of wastewater and stormwater into receiving storm drains or surface water. The National Pollutant Discharge Elimination System regulates discharges to streams. LM treats wastewater and routinely tests the water for metals, chemicals, and radionuclides, before discharging it to streams. Radioactive materials include uranium mill tailings that are stored in on-site disposal cells. LM carefully monitors and maintains the cells to prevent releases to the environment. LM also evaluates projects and activities for their potential to affect air quality or emit greenhouse gases, and determines whether permitting and monitoring will be required. Mitigation measures are implemented where applicable.

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Goal 5

All-Hands Training Held in Oak Ridge

U.S. Department of Energy (DOE or Department) Office of Legacy Management (LM) employees and managers gathered in Oak Ridge, Tennessee, for an All-Hands Training August 28 through September 1, 2017. Participants came from LM's offices in Grand Junction, Colorado; Westminster, Colorado; Washington, DC; Fernald Preserve, Ohio; and Morgantown, West Virginia. The training provided LM's geographically dispersed personnel with valuable face-to-face time to discuss work roles and projects. It also gave LM's newer employees an opportunity to learn more about LM and the diverse work that the organization performs.

The weeklong training kicked off with an awards ceremony. Oak Ridge Mayor Warren L. Gooch welcomed LM employees to the city, while Ray Smith, historian for the City of Oak Ridge and the Y-12 National Security Complex, provided attendees with an overview of the city's secret contribution to the Manhattan Project. During the ceremony, LM Director Carmelo Melendez recognized individual employees for their government service and contributions to LM.

Employees were busy throughout the week with training and site tours. Training sessions were held at DOE's Office of Scientific and Technical Information (OSTI) facility.

OSTI is responsible for collecting, preserving, and disseminating DOE-sponsored research and development results. Training topics ranged from safety culture and teambuilding to embracing organizational change. LM employees were particularly fortunate to have Acting Under Secretary for Management and Performance Matthew Moury provide them with an introduction to safety culture.

Tours gave LM employees a deeper appreciation for the variety of work that is performed across DOE. At the Y-12 National Security Complex, employees learned about the processes used to separate uranium-235 for Little Boy, the nuclear weapon that the United States dropped on Hiroshima, Japan, on August 6, 1945. During the tour, Smith shared historical site photographs and entertained LM employees with stories about some of the people who worked at the facility during the 1940s. Employees learned about the Department's ongoing efforts to clean up and remove buildings that had been used for uranium enrichment during World War II. Representatives from DOE's Office of Environmental Management took LM employees on a guided tour of some of their sites, including the East Tennessee Technology Park, where employees learned about reuse opportunities.

On the final day of the conference, employees toured the Oak Ridge National Laboratory, where tour highlights included the historical X-10 Graphite Reactor, the Spallation Neutron Source, and several of the world's top supercomputers. Participants also had the opportunity to choose between visiting the American Museum of Science & Energy, or attending a Manhattan Project National

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LM staff members John Chinkhota and Ronald King explore the X-10 Graphite Reactor control room.



LM employees learn about the Y-12 plant at the Y-12 New Hope Center.



Goal 6

DOE Marks 40-Year Anniversary – LM Marks 14 Years

The year 2017 marks 40 years since the U.S. Department of Energy (DOE or Department) was established to unify the federal government's energy planning efforts. Since its activation on October 1, 1977, the Department—bolstered by dedicated personnel like Environmental Justice Program Manager Melinda Downing, who has been with DOE since its inception—has ensured America's security and prosperity by addressing the nation's energy, environmental, and nuclear challenges through transformative science and technology solutions.

The roots of DOE, however, trace back much further to World War II, when the U.S. Army Corps of Engineers established the Manhattan Engineer District to develop and build the atomic bomb. The Manhattan Project built uranium isotope separation facilities at Oak Ridge, Tennessee; plutonium production reactors at Hanford, Washington; and a weapons laboratory at Los Alamos, New Mexico. Numerous additional sites across the nation supported these efforts. The project culminated with the United States dropping atomic bombs on Hiroshima and Nagasaki, Japan, in early August 1945. The Japanese emperor announced Japan's surrender on August 15, 1945.

After World War II, Congress sought to promote the peaceful use of atomic energy and placed weapons production under civilian control. President Truman signed the Atomic Energy Act of 1946, conveying Manhattan Project assets and responsibilities to the civilian U.S. Atomic Energy Commission (AEC). Soon after, the United States government transferred all atomic energy activities to the newly created commission. During the early Cold War years, AEC oversaw design and production of nuclear weapons, developed nuclear reactors for naval propulsion, and regulated the new commercial nuclear power industry.

By the 1970s, AEC faced increasing criticism for serving as both the regulator and promoter of the atomic energy industry. At the same time, a growing energy crisis underscored the necessity to develop a coordinated national energy policy and concentrate the government's various energy programs into one agency. President Gerald Ford signed the Energy Reorganization Act of 1974, abolishing the AEC and establishing the Energy Research and Development Administration (ERDA) and the U.S. Nuclear Regulatory Commission. In 1975, the president activated ERDA, and the agency assumed responsibility for the AEC nuclear weapons program.



U.S. Department of Energy, Washington, DC.

As the energy crisis of the 1970s deepened, the government explored ways to consolidate the nation's fragmented energy program to maximize efficiency. In 1977, President Carter signed the Department of Energy Organization Act, which abolished ERDA and the Federal Energy Administration and established the U.S. Department of Energy as the 12th cabinet-level department.

With the end of the Cold War and resulting reduction in nuclear build-up, the primary missions of many nuclear weapons production sites shifted to environmental remediation. In 1989, DOE created the Office of Environmental Restoration and Waste Management, which later was renamed the Office of Environmental Management (EM). EM's mission is to complete the safe cleanup of nuclear waste, materials, and facilities left over from five decades of nuclear weapons development and government-sponsored nuclear energy research.

In the 1990s, there was a growing realization within DOE that there would still be residual risk at some Manhattan Project and Cold War legacy sites, even after cleanup. As part of the cleanup effort, DOE had installed a variety of environmental remedies, some requiring long-term surveillance and maintenance.

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Goal 2

Promoting Electronic Quality Standards



LM seeks to improve the quality of its electronic information by instituting resolution standards on digitizing equipment.

The U.S. Department of Energy Office of Legacy Management (LM) is developing electronic information quality standards for its records and information.

With a mission emphasizing the need to “preserve, protect, and share records and information,” LM is working to ensure that what was once a largely paper-based process transitions into electronic data capture going forward.

Information quality is a critical component of LM’s electronic federal records, as it aids in the ability to access and retrieve information, reducing the amount of time it takes to respond to stakeholders’ records requests. Quality standards will also help LM comply with federal recordkeeping requirements from agencies such as the National Archives and Records Administration (NARA), whose guidelines serve as a baseline for handling electronic information.

Born digital – When information is “born digital” the best practice is to ensure that it remains in an electronic format throughout its life cycle. Printing an electronic document and then scanning it to convert it back to electronic format significantly degrades the quality. Maintaining electronic documents electronically ensures readability, searchability, and retrievability, and complies with federal efforts to manage records electronically.

Document quality and consistency – LM aims to configure its digitizing equipment to NARA-recommended default settings. Since the clarity of a scan is dependent on resolution settings, NARA recommends digitizing at 400 pixels per inch using black and white, grayscale, and color. LM is also implementing policies requiring the use of optical character recognition (OCR) for PDF files so content is searchable, and using specific fonts for digitization and readability.

File names and metadata – LM is focused on standardizing metadata entries and adopting file naming standards, as both will be beneficial for proper holdings organization and successful file searching.

LM has been lauded for the quality and compliance of its records management program. Implementing these new standards will only increase the focus on information quality to make the program stronger in the future. ❖

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LM’s Environmental Management System Prioritizes Goals for Minimizing Waste

- **Land Use** – LM seeks to reduce its footprint on the natural landscape, whenever possible. Although maintenance or monitoring projects, such as road repairs and well installations, have the potential to cause some harm to the environment, (e.g., erosion of soil, introduction of noxious weeds, disturbance to cultural resources), LM takes measures to prevent such consequences. LM identifies potential environmental impacts during the planning process of any project, incorporating mitigations and best management practices into the plan before surface-disturbing work begins. LM pursues opportunities at its widely distributed sites so that land is being beneficially reused. ❖



Fernald Preserve, Ohio, prairie in bloom.



Goal 6

PBS' "Uranium Mania" Examines Controversial Legacy

Dr. April Gil, manager of the U.S. Department of Energy Office of Legacy Management (LM) office in Grand Junction, was interviewed for the public television program "Uranium Mania," which is scheduled to air on Rocky Mountain PBS (RMPBS) November 2, 2017, at 7:30 p.m. Mountain Time. RMPBS describes the program as, "From the Manhattan Project to curing (and causing) cancer, discover the controversial legacy of uranium mining in Colorado." The program is part of "Colorado Experience," a series that explores the people, events, and places that have shaped Colorado.

Dr. Gil was interviewed by Daniel Garrison—writer and director for "Uranium Mania." Garrison is a producer and correspondent-in-residence for RMPBS at Colorado Mesa University (CMU) in Grand Junction. CMU students also contributed to the project.

"For the students in my documentary and news producing classes at CMU, sharing the process of creating the 'Uranium Mania' episode for 'Colorado Experience' has been a revelation of a history so distant to them that it may as well be a myth," Garrison said. "But it has become ever more relevant and worthy of study in a world that now seems newly fraught with nuclear peril, yet is still enamored of uranium's potential for sustainable power."



Dr. April Gil, manager of the LM office in Grand Junction, was interviewed for "Uranium Mania." Photo: Rocky Mountain PBS

Others interviewed for the program include William Chenoweth, who started his career with DOE as a field geologist for the U.S. Atomic Energy Commission in 1952; Zebulon Miracle, curator of curiosity for Gateway Canyons Resort; and Jane Thompson, president of the Rimrocker Historical Society of Western Montrose County in Colorado. ❖

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DOE Marks 40-Year Anniversary – LM Marks 14 Years

As a result, in 2003 DOE established the Office of Legacy Management (LM) to fulfill the Department's cleanup responsibilities at sites no longer needed for DOE missions. Former Energy Secretary Spencer Abraham stated that the "establishment of the Office of Legacy Management demonstrates the Department's continued commitment to manage sites where active remediation has been completed, as well as our commitment to the contractor workforce that will be affected by changing Departmental missions."

As of March 2017, LM is responsible for 92 sites in 28 states and the territory of Puerto Rico, with more sites expected to transfer to LM post-cleanup. Although LM will only be

14 years old this December, it has the responsibility for the protection of human health and the environment at sites that trace their histories back to the Manhattan Project and the nation's early atomic energy program.

"Legacy Management is dedicated to keeping the promises made to the workers who helped our country win the Cold War and to protect the health, safety, and the environment in the communities where this work occurred," said LM Director Carmelo Melendez. "We are thankful for the support we enjoy within the Department and from political leaders and community organizations that help ensure that we will have the necessary resources to fulfill our mission now and in the future." ❖



Goal 6

Learning Center Plans Shared at Business Showcase

This past summer, the community got a glimpse of the future Grand Junction Atomic Legacy Learning Center (GJALLC) at a special event in Grand Junction, Colorado. The U.S. Department of Energy (DOE) Office of Legacy Management (LM) presented its plans for the center at a business showcase hosted by the Riverview Technology Corporation (RTC) Business Incubator Center. The RTC leases office space to LM.

The day's events started with the Atomic 5K Run, which routed runners and walkers around the RTC property. Eight LM signs featuring regional history, as well as the history of the DOE and its predecessor agencies (previous site owners), were posted along the route.

The outdoor Business Showcase that followed the race featured music, food vendors, and numerous booths. LM's booth included architectural renderings of the GJALLC with details of the planned exhibits, a new classroom/meeting room, and renovation of a log cabin that was on site when the 57-acre property was purchased for use as a uranium refinery for the U.S. Army Corps of Engineers Manhattan Project.

To honor the historic log cabin, visitors to the LM booth were invited to design their own log cabins, using a play set of linking logs.

In 2016, the former DOE Grand Junction Office site was listed on the National Register of Historic Places in recognition of its important historical roles in the Manhattan Project and the Cold War. The GJALLC is scheduled to open in 2018 for the site's 75th anniversary year. ❖



Jalena Dayvault (LM) speaks with a visitor at the Grand Junction office Business Showcase booth.

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@hq.doe.gov so that we can update our database.

Thank you for your assistance.





Continued from page 1

Weldon Spring Site Hosts Total Solar Eclipse Public Viewing

As the highest publicly accessible point in St. Charles County, the disposal cell provided an excellent venue for experiencing the total solar eclipse, with 360-degree uninterrupted views. Approximately 375 visitors attended the event. Many of them were local residents while others traveled from Arkansas, Florida, Illinois, Iowa, Michigan, Texas, and other states. Staff received amazing reviews from visitors, with one commenting:

“My family wants to extend our sincere thanks for the wonderful experience we had yesterday as we watched the total eclipse atop the ‘ROCKS!’ This experience was so very positive and is due to the outstanding organizational work ... [it] was a day to be remembered.”

Effective planning was critical to hosting this successful event, which connected science and nature for so many. Weldon Spring staff ensured that visitors had positive experiences, starting with the reservation process. They guided vehicle traffic, discussed site safety and eclipse viewing safety, and planned for safe visitor access to the disposal cell.

The site has a strong background in serving the community the past 15 years. Total attendance since 2002 is anticipated to reach close to 300,000 by the end of 2017. ❖



The Astronomical Society of Eastern Missouri provided a telescope to view the eclipse.

Staff assisted visitors with registration, safety briefings, and disposal cell access.

The prime viewing location was atop the site's 41-acre disposal cell.



The “diamond ring” is the last flash of light before totality begins.



The site was bathed in darkness for approximately one minute and 30 seconds, which triggered the parking and exterior building lights to turn on.



Continued from page 4

Beneficial Reuse at the Weldon Spring Site

Because of the site's plant habitat and its unique position within the center of two large conservation areas, it's an ideal location for showcasing community and conservation reuse opportunities to the public. The restored native prairie and native plant garden allow children and adults to experience a remediated site in a natural setting.

The Interpretive Center is an asset to the community. It serves an average of more than 25,000 visitors per year and offers a variety of programs and special events for kindergarten through adult ages. Meeting rooms are available after hours for use by community organizations. The interpretive staff is knowledgeable about the site history, science-oriented, and trained in accordance with National Association for Interpretation (NAI) standards. Several staff members are also NAI Certified Interpretive Guides and the Interpretive Center Manager is a Certified Interpretive Trainer. The programs they have developed meet the Missouri Department of Elementary and Secondary Education's Grade Level Expectations, which are grade-by-grade targets for student instruction.

On a typical day, personnel can be found actively involved in teaching on-site classes, hosting events, conducting outreach, providing tours of the Interpretive Center, or serving as enthusiastic nature guides on site property hikes.

A prime example of conservation reuse at the site is the 150-acre native Howell Prairie. The prairie was originally seeded with more than 80 native Missouri species to recreate the type of prairie that would have existed during pre-settlement times. Functionally, it serves as an effective erosion barrier, while also providing high-quality habitat to support pollinators and numerous wildlife species, as it blends seamlessly with the surrounding conservation areas. As seasons progress and change, so does the picturesque background of the prairie. Plants such as the prairie blazing star, gray-headed coneflower, and Southern blue flag iris are a few of the plants that thrive once again in the area as they did long ago (see photos on page 3).

Continued on page 17



Female Ruby-throated Hummingbird.



Gray treefrog.



Native plant educational garden.



Continued from page 16

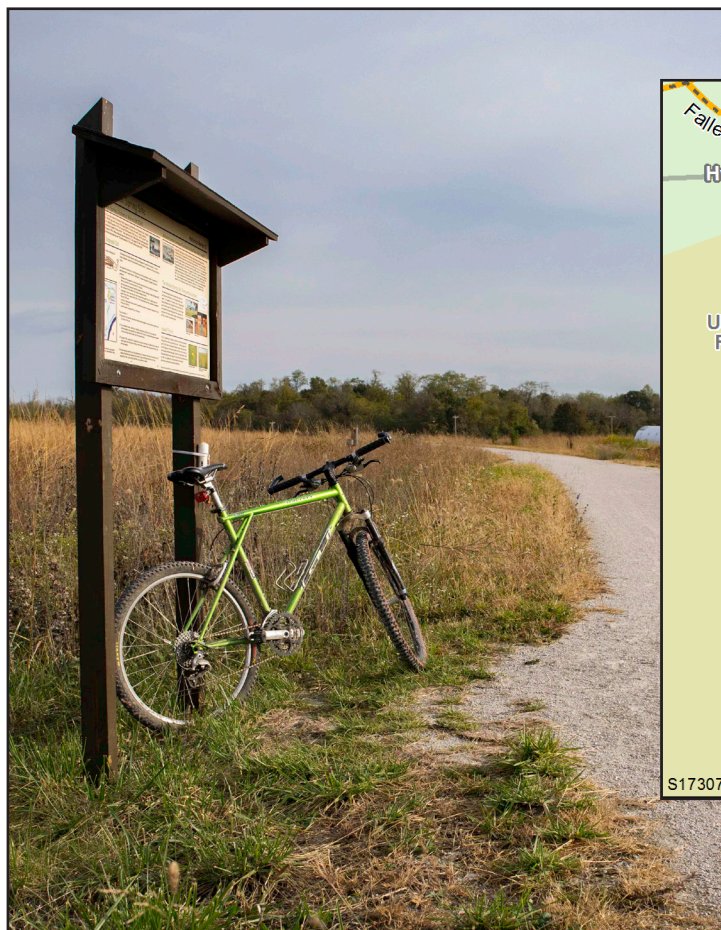
Beneficial Reuse at the Weldon Spring Site

In 2004, Howell Prairie was complemented with a beautiful native plant educational garden. Adjacent to the Interpretive Center, it is equipped with a walking path and informational markers for identifying native Missouri plant species. The garden is home to insects, birds, and more than 200 species of native plants. Currently, the prairie and the garden are used by site staff to educate the public and generate enthusiasm for promoting native plant habitat. The Ruby-throated Hummingbird and gray treefrog are known to frequent the garden (see photos on page 16).

In addition to the native Howell Prairie, the Hamburg Trail provides another great example of conservation reuse. The trail was created through a cooperative agreement between LM, MDC, and the Missouri Department of Natural Resources by repurposing a former haul road used during

remediation into a hiking and biking trail. This 8-mile trail connects the site to a vast network of trails in surrounding conservation areas and the Katy Trail State Park. To communicate the site's historic legacy to the public, historical markers are placed along the trail (see map below).

While the Weldon Spring Site has come full circle, it's history will not be forgotten. As times have changed, so have the needs for the site and surrounding area. If not for the unique history of this site and its link to national defense, it is likely that commercial developments would currently exist in its place. We invite you to come visit us as we continue to improve the site, building upon the past to create a promising future. ❖



Hamburg Trail historical marker.



Hamburg Trail connections.



Goal 6

Summer Interns Gain Valuable Experience with LM

This past summer the U.S. Department of Energy Office of Legacy Management (LM) welcomed four interns with diverse academic backgrounds. Brianna Jeffries, a senior social work major at Morgan State University, and Tywan Johnson, a senior business administration major at Bowie State University, worked at the Washington, DC, office, primarily with LM's Public and Intergovernmental Engagement (PIE) Team. Cydney Christian, a junior chemical engineering major at Hampton University, and Kianna Kiilehua, a senior biology major at New Mexico Highland University, interned with the Environment Team at the LM office in Grand Junction, Colorado.

During their internships, Jeffries and Johnson worked on a variety of communications-related projects, which afforded them opportunities to learn more about LM's mission and gain valuable professional experience. Some of their long-term projects included an in-depth analysis of LM's website data to help make critical decisions about website design changes, creating drafts of outreach materials for children in grades kindergarten through six, and assisting with LM's weekly report to the Secretary of Energy.

Christian assisted with a study comparing practical applications of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 to uranium recovery facilities. Kiilehua's focus was on a project that helped LM understand the future benefits of grazing on legacy sites. Both were able to advance their educational goals through the context of LM's mission.

At the conclusion of their internships, all four interns had the opportunity to present their projects to the entire LM organization during the weekly Manager's Meeting. They received positive feedback from both LM management and staff, who were impressed with their professionalism and the quality of their projects. The interns each expressed gratitude for the opportunity to work with LM and indicated that they were leaving with new perspectives. ❖



Washington LM interns Tywan Johnson and Brianna Jeffries.



Left to right: William Consuegra (LM contractor), Grand Junction LM interns Kianna Kiilehua and Cydney Christian, and Andy Keim and Joyce Chavez (LM) had an opportunity this past summer to visit the National Renewable Energy Laboratory.

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



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Goal 6

Environmental Justice Activities

CBCF Annual Legislative Conference

The Congressional Black Caucus Foundation (CBCF or Foundation), supported by the U.S. Department of Energy Office of Small and Disadvantaged Business Utilization, held its 47th Annual Legislative Conference at the Walter W. Washington Convention Center in Washington, DC, September 20 through 24, 2017.

The Environmental Justice Braintrust presented a session entitled “Infrastructure” on September 22 at 10:00 a.m. The Braintrust focuses on the unique relationship between environmental protection, environmental justice, economic development, and human health. Panelists included: the Honorable Stephen K. Benjamin, mayor of the City of Columbia and vice president of the United States Conference of Mayors (Columbia, South Carolina); Clarence Anthony, CEO/executive director, National League of Cities (Washington, DC); Annika Moman, senior vice

president, Power and Energy Services at AECOM (Arlington, Virginia); Lauren Alexander Augustine, director for the Office of Special Projects and program director on Risk, Resilience, and Extreme Events—Policy and Global Affairs for The National Academies of Sciences, Engineering, and Medicine (Washington, DC).

A recent report card from the American Society of Civil Engineers indicated that the United States’ overall grade for infrastructure is a D+. Infrastructure plays a role in the unique relationship between environmental protection (particularly air and water), environmental justice, energy, economic development, and human health in communities across the country. This year’s Braintrust session looked at the nation’s failing infrastructure and the impact it has on the lives of all citizens, with a focus on disadvantaged communities.

Educating Leaders at TREAT Workshop

The U.S. Department of Energy (DOE) and Savannah State University in Georgia sponsored a Teaching Radiation, Energy, and Technology (TREAT) Workshop July 12 through 14, 2017, in Aiken, South Carolina. DOE Associate Deputy Manager Thomas Johnson Jr., and the Honorable Rick Osbon, mayor of Aiken, gave welcome remarks, followed by presentations by representatives from the South Carolina Department of Health and Environmental Control, U.S. Environmental Protection Agency, U.S. National Institutes of Health, Savannah River Nuclear Solutions, and Savannah River Site Citizens Advisory Board.

The goal of the workshop was to educate kindergarten through 12th grade teachers and local community leaders who reside near the DOE Savannah River Site facility about radiation, sources of radiation, radioactive-waste management, effects of radiation on environmental health, and the negative impact of environmental radiation exposures to humans. The workshop is designed to educate teachers so that they can provide essential information to their students and ultimately the community. The workshop also provides an opportunity to expose students to careers in engineering and nuclear fields.



Dr. Kenneth Sajwan, Savannah State University, presents at the TREAT Workshop.



TREAT Workshop attendees included Mentors for Environmental Scholars interns and teachers.



Continued from page 19

Environmental Justice Activities

CLI Emphasizes Need for Active Leaders

The U.S. Department of Energy and the Medical University of South Carolina sponsored a Community Leaders Institute (CLI) July 14 and 15, 2017, in Lake City, South Carolina. The keynote address was provided by Congressman James E. Clyburn (D-South Carolina), assistant democratic leader. More than 75 participants attended the CLI, including members of the U.S. House of Representatives, South Carolina Senate, South Carolina State House of Representatives, and South Carolina House Districts. Attendees also included Mayor Lovith Anderson of Lake City and representatives from federal, state, and local governments; academia; students; and community leaders.

The CLI kicked off with the roles of federal, state, and local governments through a session focused on intergovernmental relationships. Day two session topics included youth issues and challenges, economic

development, transportation, housing and community development, and issues related to health and health disparities.

The purpose of the institute is to reinforce the principle that progress requires informed and active leaders and emphasize the unique relationship between environmental protection, human health, environmental justice, and economic development. CLI aims to educate community leaders on accessing information that is necessary for decision making and communicating this information back to community members. The Institute helps communities understand energy, environmental topics, economic development, and other issues, along with the ability to participate in federal decision-making processes. As a result of the institute, community leaders across the country are able to be informed and take on active leadership roles to encourage the development and long-term sustainability of their communities.



Dr. David Rivers (background), moderator, and panelists Lauren B. Stanton, Florence County Economic Development; Jim Moore, William County Economic Development (foreground).



Cheryl Good, panelist, U.S. Environmental Protection Agency.

Underserved Community Representatives Participate in Leadership Meeting

A Community Leaders Meeting (CLM), held August 7 through 10, 2017, at the Upper Fruitland Chapter House of the Northern Navajo in Shiprock, New Mexico, brought together leaders from the U.S. Department of Agriculture, U.S. Environmental Protection Agency, U.S. Department

of Energy, U.S. Fish and Wildlife Service, U.S. Department of the Interior, the Center for Disease Control, and the program manager for the College/Underserved Community Partnership Program (CUPP).

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Environmental Justice Activities

Underserved Community Representatives Participate in Leadership Meeting

The CUPP provides a creative approach to partnering and delivering technical assistance to small, underserved communities from local colleges and universities at no cost to the communities. The program combines environmental justice concerns and mission-related objectives of multiple agencies with core-curriculum objectives of local colleges and universities.

Communities benefit from innovative technical assistance and approaches provided by students attending nearby academic institutions. Students benefit by gaining practical experience that can serve as a resume builder, while earning course credits through their academic institutions. Federal agencies benefit through the effective and efficient use of resources.

After the Chapter meeting, the agencies met with presidents of four tribal colleges: San Juan College, Navajo Technical University, and Southwestern Indian Polytechnic Institute in New Mexico; and Diné College in Arizona. Each meeting consisted of a discussion regarding CUPP, and how the colleges might support the Chapters. The meetings also provided the agencies the opportunity to tour the facilities

and observe the talents and accomplishments of the students. The CLM resulted in actions to develop a specific prioritized wish list of the issues raised by the Chapter Houses and college presidents, look at ways to support communities with the collaboration of CUPP and the Interagency Working Group, select a lead agency, and begin implementing solutions to issues of concern.

Valle De Oro Site Visit

The last day of the meeting included a visit to the Valle De Oro National Wildlife Refuge, a community-driven project, and surrounding communities in Albuquerque, New Mexico. The tour showcased the mixed-use character of the area—cement plants next to playgrounds, water treatment plants next to elementary schools—and how the 500-acre-plus refuge area changes the landscape and provides green space for residents. Friends of Valle De Oro, a non-profit group, played a large role in making the refuge possible by raising half the money needed to purchase the property. The organization has received funds to build a multipurpose visitors center that will serve the community in various ways. ❖



Southwestern Indian Polytechnic Institute students complete a skill check in an instrumentation and control technology laboratory.



A BP employee learns to adjust a liquid level controller under the observation of School of Energy instructor Jerry Huwe.



Student Kal Valient learns to operate a machine to cut and thread pipe.



Program Update

LM Goals



1 Protect Human Health and the Environment



2 Preserve, Protect, and Share Records and Information



3 Safeguard Former Contractor Workers Retirement Benefits



4 Sustainably Manage and Optimize the Use of Land and Assets



5 Sustain Management Excellence



6 Engage the Public, Governments, and Interested Parties

Continued from page 10

All-Hands Training Held in Oak Ridge

Historical Park ranger program on secrecy and spies during World War II. The National Park Service is DOE's partner in managing the Manhattan Project National Historical Park.

LM employees have provided feedback that the week-long training was educational and it provided them with a greater sense of purpose to fulfill LM's mission of carrying out DOE's post-closure responsibilities. "It was so great to meet all of my colleagues from across LM and to see so many places with such rich history in the Manhattan Project," said LM Site Manager Ken Kreie.

"Getting face time with my colleagues has greatly improved my understanding of the

structure of our program and helped to develop good working relationships with them," added LM Site Manager Tashina Jasso.

LM is grateful to the City of Oak Ridge and all of our DOE colleagues who helped make the 2017 All-Hands Training a success. ❖



Attendees at the LM All-Hands Training in Oak Ridge.



Anticipated LM Sites Through FY 2025





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