



Program Update

January–March 2010

Welcome to the January–March 2010 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.

Goal 1

LM Installs a Solar Photovoltaic System at Tuba City Disposal Site

A grid-tied solar photovoltaic system was installed at the Tuba City, Arizona, water treatment plant six miles north of Tuba City. The estimated annual production from the 51 kW array is 80,000 kWh. Three hundred solar panels are arranged in four arrays that feed nine inverters. The inverters change the 270-volt DC electricity from the solar panels to 440-volt three-phase AC electricity that the water treatment plant uses. The panels, angled at 20 degrees to minimize shading, were installed at ground level south-east of the treatment plant.

About 4 percent of the site's annual electricity use will be provided by the system although on a sunny day about 25 percent of the power will come from the sun. When the contaminated water evaporator is not operating, excess electricity will be metered into the Arizona Public Service grid.

The solar photovoltaic project adds to the renewable energy being produced at Tuba City by the solar concentrating collector system installed in 2009. This system uses parabolic mirrors to concentrate the sun to preheat water for the evaporator.

Legacy Management (LM), as well as all of the federal government, has a requirement to reduce greenhouse gas emissions as well as energy use. By executive order, energy use must be cut by 30 percent by 2015 and greenhouse gases must be cut by at least 28 percent by 2020. The Tuba City renewable energy projects and conservation measures will help LM meet these goals. ❖



Operation of an inverter that converts solar photovoltaic DC electricity to usable AC electricity is checked regularly.

Legacy Management Goals

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

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

Goal 3: Support an effective and efficient work force structured to accomplish Departmental missions and assure continuity of contractor worker pension and medical benefits.

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

Goal 5: Improve program effectiveness through sound management.

See page 10 for a map of LM sites.

See page 11 for a more detailed version of LM's goals.



Goal 2

LM Business Center Begins Records Storage Mission



The Legacy Management Business Center (LMBC) was opened on December 22, 2009. The facility, located within the West Virginia University Research Park in Morgantown, West Virginia, is a National Archives and Records Administration (NARA)-certified federal records storage facility with a 150,000 cubic foot storage capacity, including a controlled environment area for special media storage. The records warehouse floor space is approximately 31,000 square feet and the controlled environment area is 1,128 square feet. Both areas contain rows of 15-foot tall records shelves.



The facility received its first shipment of records on January 8, 2010. As of mid-March, 15,839 boxes of records have been received and 15,830 of those boxes have been shelved. The documents to be stored, managed, and processed at the facility are inactive DOE records from the Cold War nuclear sites. Records are retrieved in response to various requests for information. The records currently stored at several NARA federal records centers are to be transferred to the LMBC for storage as part of the facility mission.



The facility is expected to attain two Leadership in Energy and Environmental Design (LEED) Gold certifications from the U.S. Green Building Council (USGBC). The second certification, LEED for Core & Shell, aids designers, builders, developers, and new building owners in implementing sustainable design for new core and shell construction and covers base building elements such as structure and the HVAC system. Notable environmentally friendly features of the building include a windowed clerestory for lighting, use of low-emitting materials, controlled lighting systems, enhanced indoor air quality management, optimization of energy performance, use of regional materials, waterless and low-flow toilets, and sustainable landscape design. LEED certification is expected in the spring of 2010, following USGBC review. ❖





Goal 4

Habitat Enhancement at Fernald

The abundant fauna and flora in the diverse ecosystems at the Fernald Preserve in Ohio are a testament to the successful restoration efforts at the site. The ecosystems are monitored with various programs that collect data and aid in the decision-making process for future restoration work. These programs are one of many ways to enhance the ecosystems at the Fernald site.

One such program takes the unique approach of drawing on community member involvement by allowing volunteers to assist with the monitoring of eastern bluebird nest boxes. Volunteers, under the supervision of Stoller staff, will be inspecting these boxes during the 2010 nesting season. The monitoring program will determine if these bluebirds or other cavity-nesting species are using the boxes, the number of eggs per box, hatch success, and evidence of parasitism or nest depredation by a nonnative species, such as house sparrow or European starling. The results of the monitoring will be also be shared with the Ohio Breeding Bird Atlas project and the North American Bluebird Society, a national organization that promotes the study and recovery of bluebirds and other cavity-nesting species.

The Fernald Preserve and Weldon Spring, Missouri, sites both have extensive tracts of grasslands. Comprehensive grassland management programs are required to maintain the vitality of these prairie areas. Prescribed burns and baling of the grasses are key components of grassland management at both sites. The prescribed burns, which take place in the spring and fall, burn off dead vegetation, stimulate fresh growth by returning nutrients to the soil, and prepare the scorched, black burn areas to warm and retain heat more quickly than the surrounding landscape. This additional warmth aids in springtime seed germination. The burning also reduces the threat of wildfires by eliminating much of the dead grass, which serves as fuel for fires. All prescribed burns are planned and conducted by trained personnel under strictly controlled conditions relating to ground moisture, relative humidity, wind speed, and wind direction. More than 23 acres have been burned at the Fernald Preserve so far this year.

In areas where burning is not practical, the grasses are cut and baled. Baling is not as efficient as prescribed burns for removing dead vegetation, but does stimulate new growth. Baled grass is spread in other areas of the site so that the seeds can be used to enhance existing prairies. ❖



Prescribed burns like this one at the Fernald Preserve mimic nature's efficiency in creating a thriving prairie.



Goal 1

Maybell West, Colorado, Disposal Site Transitions to LM

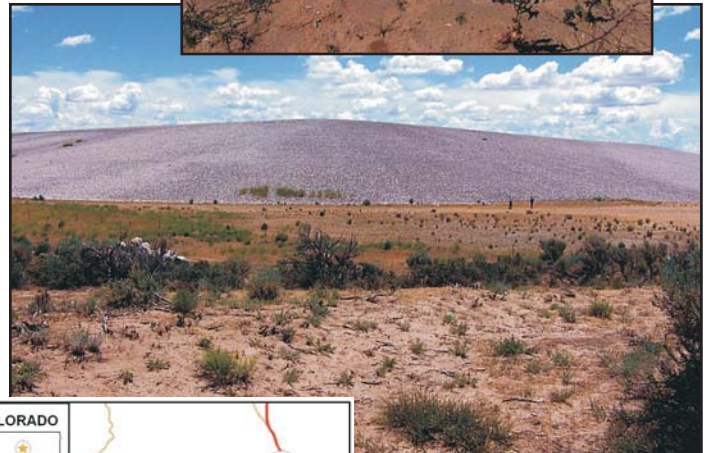
The Maybell West, Colorado, Disposal Site is now officially under the long-term care of the Office of Legacy Management (LM), becoming the 87th site to transition to LM. The licensee, Umetco Minerals Corporation, constructed and operated uranium heap leach cells on the site from 1975 through 1982. Decommissioning, remediation, and reclamation ensued and were completed in 2005. The change in licensing and the acceptance of the long-term surveillance plan (LTSP) occurred on March 11, 2010. Under provisions of the LTSP, the Department of Energy will conduct annual inspections of the site to evaluate the condition of surface features and perform site maintenance as necessary.

This is the third Uranium Mill Tailings Radiation Control Act (UMTRCA) Title II site to transfer from a private licensee to LM since LM's inception and the first Title II site which involved the transfer of licensing authority from a Nuclear Regulatory Commission (NRC) Agreement State to NRC. Transition activities began in earnest in 2007.

As this and other transitions progressed, it became apparent that LM should develop tools to perform transition activities in a consistent manner. In response to this need, LM drafted the *Process for Transition of Uranium Mill Tailings Radiation Control Act Title II Disposal Sites to the U.S. Department of Energy Office of Legacy Management for Long-Term Surveillance and Maintenance* in June 2009. The transition process identifies multiple activities associated with site transition such as regulatory closure, real property transfer, and project management.

In a continual improvement effort, the transition process is currently being updated to adjust for lessons learned during the Maybell West Disposal Site transition. Primary changes will include improved coordination with other agencies (Colorado Department of Public Health and the Environment, NRC, and the U.S. Army Corps of Engineers) and adjustments to tracking and timing tools. ❖

View from the disposal cell looking south toward the ancillary cell.



View looking northwest at the Maybell West disposal cell.



Goal 1

DOE Completes Record of Decision for Laboratory for Energy-Related Health Research (LEHR) Site

The U.S. Department of Energy (DOE) has completed the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) environmental cleanup of the DOE areas of the Laboratory for Energy-Related Health Research, also known as LEHR, at the University of California, Davis (UC Davis). DOE also signed an agreement with the university that provides for the long-term monitoring and maintenance of the DOE areas at the site.

The U.S. Atomic Energy Commission first sponsored radiological studies on laboratory animals at UC Davis in the early 1950s. Initially on the main campus, LEHR was moved to its present location in 1958. Research at LEHR through the late 1980s was focused on health effects from chronic exposure to radionuclides, primarily strontium-90 (Sr-90) and radium-226 (Ra-226), using beagles as research subjects. Other related research was conducted at the site concurrently with these long-term studies. In the early 1970s, a cobalt-60 irradiator facility was constructed at the site to study the effects of chronic exposure to gamma radiation on humans, again using beagles.

Between 1958 and 1988, DOE-sponsored research at LEHR generated radiological and hazardous waste that was disposed of on site. Because some of this waste contaminated soil and groundwater, the U.S. Environmental Protection Agency (EPA) designated LEHR as a Superfund cleanup site in 1994. Under a Federal Facilities Agreement, UC Davis and DOE are responsible for completing the environmental cleanup at LEHR.

Continued on page 6

From 1975 to 2009, DOE decontaminated and decommissioned above-ground structures and performed the following removal actions:

- 1975** Gravel and curbing were removed from 64 pens in the Western Dog Pens area.

- 1995** Demolished the Imhoff Wastewater Treatment Facility as a voluntary removal action.

- 1995 and 1996** Concrete pedestals and wooden barrels were removed from the Eastern and Western Dog Pens areas and disposed of as low-level radioactive waste at the Hanford Site in Washington. Soil and gravel data was also collected during the removal activities.

- 1996** Conducted a removal action at the DOE Disposal Box area.

- Before 1997** Decommissioned, decontaminated, and released for unrestricted use four of the 17 buildings associated with the LEHR Federal Facility.

- 1998** Conducted a removal action at the Southwest Trenches area.

- 1999 and 2000** Conducted a removal action at the Radium/Strontium Treatment Systems area. Domestic Septic System (DSS) 2, parts of DSS 1, and parts of the DSS 5 leach field were removed.

- 2001** Conducted a removal action in the Western Dog Pens area.

- 2002** Conducted a removal action in the DSS 3 and DSS 6 areas.

- 2007** Removed and disposed of concrete from the Eastern Dog Pens area.



Continued from page 5

DOE Completes Record of Decision for LEHR Site

All DOE-funded research activities at LEHR ceased. DOE began investigating the contamination at the research site in 1988 and started cleanup work at the site in 1996. Investigation and analysis of the remaining contaminants in the DOE areas provided data for DOE to prepare a detailed evaluation of remedial alternatives to complete the cleanup. The Proposed Plan summarized the remedial alternatives and identified DOE's preferred alternative. The final remedial alternative in the Record of Decision (ROD) was determined after consideration of public input and in consultation with federal and California state regulators.

DOE successfully completed removal actions at the DOE areas of LEHR, which significantly reduced impacts to human health and the environment. However, residual contaminants remain at the site at concentrations that prevent unrestricted use of some areas or that have the potential to impact groundwater quality above background concentrations in the future. The ROD signed in 2009 addresses the cleanup in six DOE areas. A separate proposed plan and ROD for groundwater and other UC Davis disposal units will be issued by UC Davis in the future.

The ROD, which was signed by EPA and the State of California, outlines DOE's long-term responsibilities to ensure the remedy remains protective. Under the ROD, DOE will conduct long-term groundwater monitoring to detect changes in contaminant concentrations that could impact human health and the environment. If monitoring indicates impacts to the groundwater by one of the identified contaminants of concern, then DOE will evaluate remedial options and determine whether additional action is appropriate.

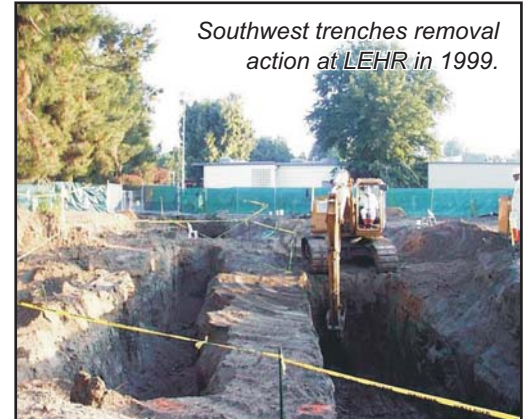
The ROD also requires land-use controls known as institutional controls to prevent exposure where there is a potential for unacceptable risk to human health. Implemented controls include restricting activities that disturb the subsurface and a prohibition against residential use in one area. DOE expects to begin implementing the final remedy in August 2010.

The Regents of the University of California own the land on which the LEHR Federal Facility is situated, and UC Davis is responsible for most activities associated with the site. In 2009 DOE entered into a Memorandum of Agreement with the Regents, whereby DOE will provide UC Davis with a grant to perform the tasks required by the ROD.

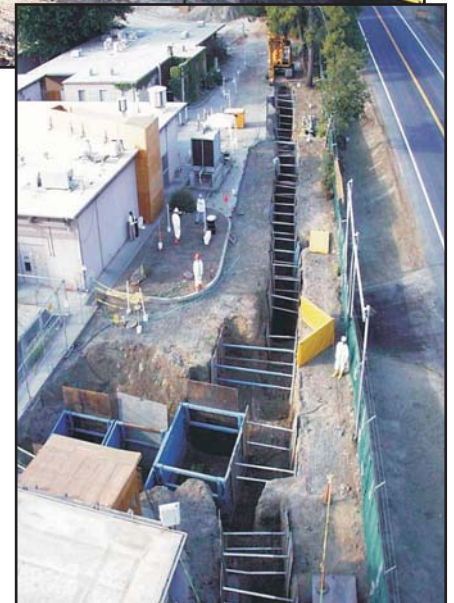
Under the agreement, UC Davis will record covenants to enforce land-use restrictions, ensure the implementation of land-use restrictions defined in the recorded covenants and provide a process that ensures the implementation of the Soil Management Plan, which outlines the requirements for excavation and other activities at specific areas of the site. The university will also conduct groundwater and surface water monitoring and reporting, as requested by DOE, and provide other services as agreed to by DOE and UC Davis.

DOE's grant to UC Davis will be renewed annually for as long as the land-use covenants remain in place. The university has also agreed to give regulatory agencies access to the DOE area of the site per the ROD requirements.

DOE will retain responsibility for the long-term surveillance and maintenance of the site for the foreseeable future and will conduct CERCLA-required periodic reviews every 5 years to ensure that the remedy remains protective. ❖



Southwest trenches removal action at LEHR in 1999.



Radium/strontium treatment system removal action at LEHR in 2000.



Goal 1

Savannah State University Professor Honored with Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring

Kenneth Sajwan, Ph.D., professor and coordinator of the Environmental Science Program at Savannah State University, was one of 22 individuals and organizations recognized by President Barack Obama at a ceremony for the winners of the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring at the White House on January 6, 2010.



President Barack Obama, center, shown with winners of the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring.

“There is no higher calling than furthering the educational advancement of our nation’s young people and encouraging and inspiring our next generation of leaders,” President Obama said. “These awards represent a heartfelt salute of appreciation to a remarkable group of individuals who have devoted their lives and careers to helping others and in doing so have helped us all.”

Presented each year since 1996, the mentoring award recognizes individuals and organizations that have demonstrated a commitment to mentoring students and increasing the participation of minorities, women, and disabled students in science, mathematics, and engineering. The award was created to recognize the critical importance of mentors in the academic and personal development of students and colleagues who are underrepresented in the fields of science, technology, engineering, and mathematics (STEM). Candidates for the Presidential Mentoring Award are nominated by colleagues, administrators, and students from their home institutions.

“I am honored to receive the award,” Sajwan said. “It is gratifying to know I can be of some use and be part of the future success of students.” Sajwan plans to use his monetary award on a student research intern program at Savannah State University.

Nationally recognized for his research in the area of the biogeochemistry of trace elements, Dr. Sajwan’s work has been included in over 100 publications. He was elected as a Fellow of the American Society of Agronomy in 2005, Fellow of the Soil Science Society of America in 2007, and the Georgia Governor’s Teaching Fellow earlier this year. He has served as an invited speaker, session chair, and technical advisor of several national and international conferences. He is an effective grant writer and has written over \$5 million in funded grants since 1998.

Dr. Sajwan has been a very active partner with the U.S. Department of Energy’s Environmental Justice Program for more than ten years. He has established a cutting-edge environmental analytical laboratory for student hands-on research. Under the auspices of this project Dr. Sajwan has mentored more than 50 students and has been successful in guiding more than twenty students to graduate school. Additionally, he has trained more than 300 community leaders and K-12 teachers on the concept and health effects of nuclear radiation and nuclear waste management. ❖

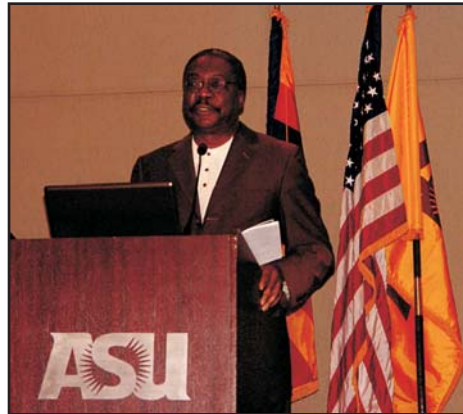


Goal 1

Community Leaders' Institute at Arizona State University, Phoenix, Arizona

The Native American Community Leaders' Institute was held March 8 and 9, 2010, at Arizona State University in Phoenix, Arizona. The purpose of the Institute was to reinforce the "progress requires informed and active leaders" principle and to emphasize the unique relationship between environmental protection, human health, environmental justice, and economic development as an essential part of community development. Sessions were held regarding tribal, federal, state and local government relations; economic development; health issues; broadband development; cultural preservation; and education.

A critical factor in the success of community development programs is a well-informed community. Action occurs when those with authority assume an informed and active leadership role. This Institute helped these leaders to know how to access and obtain the information necessary for making good decisions and communicate that information to the citizenry. This Community Leaders' Institute was co-sponsored by the U.S. Department of Energy and The Medical University of South Carolina. ❖



The Native American Community Leaders' Institute was held March 8 and 9, 2010, at Arizona State University in Phoenix, Arizona.

Goal 5

FY 2011 Budget Request

On February 1, 2010, President Barack Obama submitted the fiscal year (FY) 2011 budget request to Congress. The Office of Legacy Management's portion of the request was \$188.6 M. This amount is down slightly from the FY 2010 appropriation of \$190.8 M. The funding is divided among the four goals as follows:

- **Goal 1: Protect Human Health and the Environment** – \$36.7 M (this includes Environmental Justice)
- **Goal 2: Legacy Records and Information Management** – \$11.5 M
- **Goal 3: Support the Work Force and Assure Contractor Pensions and Post-Retirement Benefits** – \$122.0 M
- **Goal 4: Manage Legacy Land and Assets** – \$5.9 M

The balance of \$12.5 million is for federal salaries, travel, and training. Hearings before the House Energy and Water Subcommittee were held on March 16, 2010. FY 2011 will begin on October 1, 2010. ❖



Goal 1

The State of Environmental Justice in America 2010 Conference

May 12 Through 14, 2010

May 12 through 14, 2010, the U.S. Departments of Energy and Agriculture, the U.S. Environmental Protection Agency, and the National Small Town Alliance will sponsor The State of Environmental Justice in America 2010 Conference. This is an effort that creates a coalition of communities, scholars, government agencies, researchers, and the private sector to examine what environmental justice means in the 21st century and how environmental justice and economic development can co-exist. This will be the fourth annual conference.

The conference has brought together participants from Historically Black Colleges and Universities (HBCUs); Minority Serving Institutions (MSIs); other academic institutions; business and industry; community activist groups; faith-based organizations; federal, tribal, state, and local agencies; non-profit, philanthropic organizations; limited-resource farmers; and others to participate in dialogue on achieving equality of environmental protection.

While the conference will continue to serve as an academic and legal conference to advance scholarship regarding environmental justice, it will also serve as a means to help historically under-utilized entities increase their participation in federal contracting opportunities. A related goal of this conference is to expose law and business students to the myriad of complicated aspects of environmental justice.

Expected outcomes of the conference are rigorous analysis and discussion of environmental justice issues from diverse points of view; increased participation from HBCUs, other MSIs, and grass roots community groups; participation of minority businesses and other under-utilized entities in federal contracting opportunities; better understanding of environmental justice successes and how to replicate them; and stronger commitment to environmental justice from key groups including local, state, and tribal and federal agencies; business and industry; academic institutions; and other entities.

For more information, visit the conference website at http://www.LM.doe.gov/Office_of_the_Director/Environmental_Justice/Conference.aspx. ❖

Goal 1

The George Washington University Environmental Resource Policy Graduate Program

The U.S. Department of Energy (DOE) Office of Legacy Management and The George Washington University (GWU) have developed a Memorandum of Agreement for a student research project. The project involves research into management issues associated with the former uranium milling sites in the Navajo Nation in areas in Arizona, New Mexico, and Utah. The components of the research include environmental justice issues between the Navajo Nation and DOE; political issues involving the various stakeholders; and technical issues related to energy, environment, human health, and engineering. Specific aspects of the research project will involve monitoring and maintenance of disposal sites; groundwater remediation and surveillance activities; human health impacts; and other issues identified by the GWU team. ❖



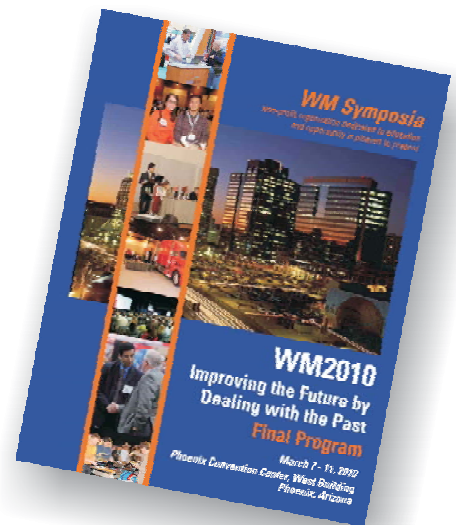
LM Sites



Goal 2

Office of Legacy Management Participates in 2010 Annual Waste Management Conference

March 7 through 11, 2010, the Department of Energy (DOE) Office of Legacy Management (LM) participated in the Waste Management Conference 2010, in Phoenix, Arizona. LM's participation included submission of papers and oral presentations as part of a panel session titled Site Post-Closure Challenges and Long-Term Stewardship. The presentations provided a discussion of the first five years of managing DOE's legacy responsibilities. The session provided discussions on other topics including: beneficial reuse of LM sites and renewable energy initiatives; the Formerly Utilized Sites Remedial Action Program; groundwater remediation at the Fernald Preserve in Ohio; and, natural and enhanced attenuation of soil and groundwater at the Monument Valley, Arizona, Site. In addition, LM presented a poster titled *Managing Legacy Records and Information*. As in previous years, LM sponsored an exhibit showing where its sites are located across the country. ❖





Legacy Management Goals



Goal 1: Protect human health and the environment through effective and efficient long-term surveillance and maintenance. This goal highlights DOE's responsibility to ensure long-term protection of people, the environment, and the integrity of engineered remedies and monitoring systems.

Goal 2: Preserve, protect, and make accessible legacy records and information. This goal recognizes LM's commitment to successfully manage records, information, and archives of legacy sites under its authority.



Goal 3: Support an effective and efficient work force structured to accomplish Departmental missions and assure continuity of contractor worker pension and medical benefits. This goal recognizes DOE's commitment to its contracted work force and the consistent management of pension and health benefits. As sites continue to close, DOE faces the challenges of managing pension plan and health benefits liability.

Goal 4: Manage legacy land and assets, emphasizing protective real and personal property reuse and disposition. This goal recognizes a DOE need for local collaborative management of legacy assets, including coordinating land use planning, personal property disposition to community reuse organizations, and protecting heritage resources (natural, cultural, and historical).



Goal 5: Improve program effectiveness through sound management. This goal recognizes that LM's goals cannot be attained efficiently unless the federal and contractor work force is motivated to meet requirements and work toward continuous performance improvement.



Program Update

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