The Deputy Secretary of Energy
Washington, DC 20585

May 26, 2015

MEMORANDUM FOR HEADS OF DEPARTMENTAL ELEMENTS

FROM: ELIZABETH SHERWOOD-RANDALL

SUBJECT: Department of Energy Asset Management Plan

To strengthen the management of our land, facilities, and equipment, the Secretary has issued an innovative Departmental framework, "Department of Energy Asset Management Plan – A Framework for Decision Making and Implementation." This plan will encourage the return of some of these national resources to their rightful owners — the American public.

The plan provides an integrating strategy for (1) supporting the management and performance goals in the Department's Strategic Plan; (2) fulfilling Federal requirements governing the acquisition, management, and disposal of property; and (3) conducting activities in a manner that provides the best value for the American taxpayers. The guiding principles ensure the Department's portfolio of real and personal property assets is appropriately sized and aligned to efficiently support mission execution.

Accordingly, the Department of Energy will:

- Manage all of its property as valuable national resources in a cost effective manner.
- Maintain accurate inventories, credible condition assessments, appropriate capacity and utilization, reliable measurements, and repeatable processes.
- Use industry standards and benchmarks for continuous improvement.
- Prioritize investments based on lifecycle cost benefit analyses, best practices, and validated data to guide enterprise-wide decisions.
- Involve stakeholders in property planning and implementation by considering local site conditions as well as the larger regional context in property decisions.
- Ensure the acquisition, sustainment, reuse, or disposal of property assets support critical missions; stimulate the economy; and protect workers, the public, and the environment.

I know you share my desire to right-size and maintain our property portfolio in a sustainable and cost-effective manner; prioritize investment decisions; ensure public participation in our planning processes; and provide our property professionals with

essential knowledge and skills. I look forward to working with you to fulfill the responsibility entrusted to us by the citizenry of this country for managing these valuable national resources.

This plan is effective immediately. The Office of Acquisition and Project Management will work with your offices to facilitate its implementation and will codify necessary changes in the next update of DOE Order 430.1 and other applicable directives.

Attachment

U.S. DEPARTMENT OF ENERGY

ASSET MANAGEMENT PLAN

A FRAMEWORK FOR DECISION MAKING AND IMPLEMENTATION

DOE/ME-0060, REV. 1 MAY 2015

COVER PHOTO DESCRIPTIONS

Cover: Top Photo

Energy Sciences Building. Elevation of the recently completed Energy Sciences Building (ESB) project at Argonne National Laboratory in Lemont, Illinois. The ESB was a capital line-item project funded by the Science Laboratories Infrastructure program at a total cost of $96 million and was completed on August 6, 2014. The ESB project provided 173,000 gross square feet of interdisciplinary research and collaborative space to accommodate a range of physical sciences research to develop advanced energy solutions, including an Energy Innovation Hub and an Energy Science Energy Frontier Research Center.

Cover: Bottom Photos – Left to Right

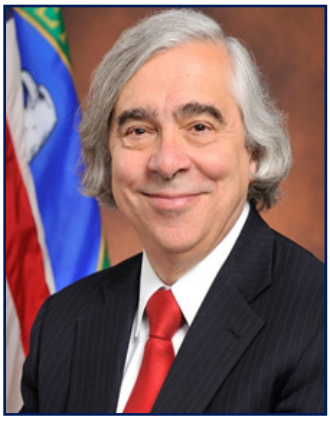
Oak Ridge Leadership Computing Facility. Home to Titan, the world's most powerful supercomputer for open science with a theoretical peak performance exceeding 20 petaflops (quadrillion calculations per second).

National Renewable Energy Laboratory Vehicle Testing and Integration Facility. New Toyota Prius, Rav4, and Scion prototype vehicles on display during the sustainable mobility seminar.

The Naturita Disposal Site. Defense related uranium mine once provided ore to the Lakeview, OR, Uranium Mill Tailings Radiation Control Act (UMTRCA) mill now in long-term custody of DOE and managed by the Office of Legacy Management.

Power Lines. Electricity pylons.

MESSAGE FROM THE SECRETARY



The U.S. Department of Energy (DOE) researches clean, affordable energy sources; ensures the security of the nation's nuclear stockpile; addresses the legacy of the Cold War; and advances basic science. The Department depends on the effective and efficient management of its real and personal property assets – all of which are vital to achieving DOE's mission in energy, environmental, and nuclear security. Therefore, I am pleased to present the Department's Asset Management Plan, which identifies goals, objectives, and key management systems we use to oversee our real and personal property assets.

We are custodians of a large, diverse portfolio of assets. Our property assets help us to promote scientific and technological innovation, sponsor basic research in physical sciences, and ensure the safe and effective Cold War cleanup. The plan establishes the organization, systems, processes, and measures used to make capital investment decisions and manage real and personal property assets. Effective property management and sound decisions result in accurate inventories, credible condition assessments, reliable performance measurement, and the appropriate use of industry standards and benchmarks for continuous improvement.

This plan will be implemented by a well-trained and qualified workforce committed to maintaining a safe and secure work environment. DOE's stewardship of its property assets demonstrates to the American taxpayers a continued commitment to efficient management while protecting the health, safety, and security of surrounding communities.

Ernest J. Moniz
Secretary
U.S. Department of Energy

May 2015

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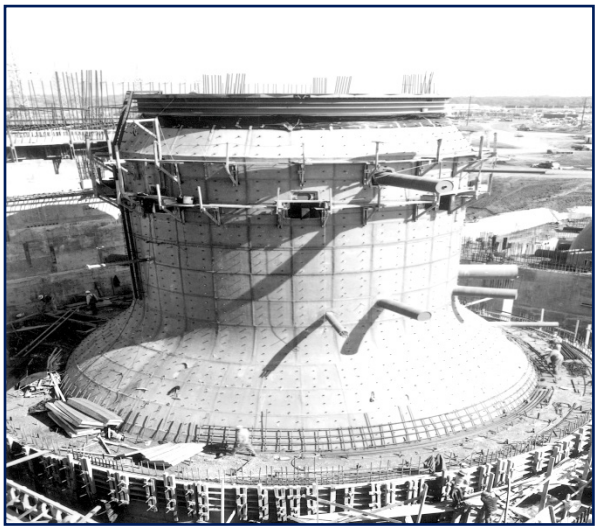
INTRODUCTION

The Department has a rich, diverse history tracing back to the Manhattan Project and World War II. Following the war, Congress created the Atomic Energy Commission to oversee the nuclear complex supporting the Manhattan Project and to maintain civilian government control over atomic research and development. During the early Cold War years, the Commission focused on designing and producing nuclear weapons and developing nuclear reactors for naval propulsion. However, the Atomic Energy Act (AEA) of 1946 ended exclusive government use of the atom and started the growth of the commercial nuclear power industry, giving the Commission authority to regulate the new industry. The AEA established the development, regulation, use, and disposal of nuclear materials, equipment, and facilities, including the acquisition, purchase, lease, hold, and disposal of real and personal property.



Oak Ridge Site. Construction of nuclear power reactor. (c. 1970)

The Commission was abolished in the 1970s and the Energy Reorganization Act of 1974 created two new agencies: the Nuclear Regulatory Commission to regulate the nuclear power industry, and the Energy Research and Development Administration (ERDA) to manage the nuclear weapons, naval reactors, and energy development programs. Later, in response to changing needs and an extended energy crisis, Congress passed the Department of Energy Organization Act in 1977, creating the Department of Energy (DOE).

The Department combined responsibilities of the Federal Energy Administration, ERDA, and parts of several other agencies. The legislation brought together most of the government's energy, science, and technology programs, and defense responsibilities, including design, construction, and testing of nuclear weapons. The Department provided the framework for a comprehensive, balanced national energy plan by coordinating and administering the government's energy functions. The Department undertook responsibility for long-term, high-risk research and development of energy technology, power marketing, energy conservation activities, the nuclear weapons programs, several energy regulatory programs, and a central energy data collection and analysis program.

In 1999, legislation[1] created the National Nuclear Security Administration (NNSA) as a semi-autonomous agency within DOE to enhance national security through the military application of nuclear technology and to reduce the threat of proliferation of weapons of mass destruction. NNSA was established to maintain and enhance the safety, security, reliability and performance of the U.S. nuclear weapons stockpile without nuclear testing; work to reduce global danger from weapons of mass destruction; provide the U.S. Navy with safe and effective nuclear propulsion; and respond to nuclear and radiological emergencies in the U.S. and abroad.

Handford Site. Construction of production area at Hanford Engineer works. (c. 1944)

The Department has shifted focus as the needs of the nation have changed. In the late 1970s, the Department emphasized energy development and regulation. In the 1980s, nuclear

1 National Defense Authorization Act for Fiscal Year 2000.

weapons research, development, and production took priority. With the end of the Cold War, the Department focused on cleanup of the nuclear weapons complex, nuclear nonproliferation, nuclear weapons stewardship, and the potential impact of climate change. The 2000s have brought emphasis to climate change, clean energy development, reliable energy supplies and delivery, energy efficiency and conservation, scientific research, and technology transfer. The Department's mission and strategic goals reflect this expanding emphasis and are documented in the DOE 2014-2018 Strategic Plan. The DOE organization is closely aligned to achieve these strategic goals.

DEPARTMENTAL ORGANIZATION AND SITES

The Department operates 17 world-class research laboratories[2] that provide scientific, technological, and engineering capabilities to support the DOE science, energy, and security missions. The DOE organization includes the Federal Energy Regulatory Commission (FERC), and four Power Marketing Administrations (PMAs). The Department has an annual budget of about $27.9[3] billion and employs approximately 15,000 Federal and 100,000 contractor employees[4] who conduct nuclear security, energy research and development, and environmental cleanup at over 85 sites in the United States (Figure 1) and long-term surveillance and maintenance at about 90 defense legacy sites (Figure 2). DOE is the largest Federal sponsor of basic research in the physical sciences by constructing and operating unique facilities used by 29,000 researchers from academia, government, and industry at its national laboratories, as well as at more than 300 universities.

Collectively, the DOE laboratory complex and other organizational elements comprise a preeminent Federal research system, providing the Nation with strategic scientific and technological capabilities. DOE laboratories are responsible for: (1) execution of long-term government scientific and technological missions with complex security, safety, project management, and operational challenges; (2) development of unique, multidisciplinary scientific capabilities beyond the scope of academic and industrial institutions to benefit the Nation's researchers and national strategic priorities; and (3) development and sustainment of critical scientific and technical capabilities to which the government requires assured access.

Central to DOE's business model is the use of contracts that draw on private-sector expertise in research and development to manage and operate government-owned facilities. The Department's predecessor agencies used management and operating (M&O) contracts for the rapid and successful production of atomic weapons. The M&O contract model was designed to ensure the recruitment of world-leading scientific and technical talent, and the successful completion of the mission. In recognition of the contractors' success in that endeavor, Congress, via the Atomic Energy Act of 1946, carried the M&O model forward into the organization of the Atomic Energy Commission and its follow-on agencies, including the DOE.

The legislation "permits management contracts for the operation of government-owned facilities so as to gain the full advantage of the skill and experience of American industry." The unique M&O contract relationship enables the Government to establish objectives for the laboratories' research programs and to exercise controls necessary to assure security, safety, and the prudent use of public funds, while allowing private sector organizations selected for the technical ability and managerial expertise to carry out the laboratories' day-to-day operations. M&O contracts are characterized by their special purpose and the close relationship they create between the Department and the contractor. The work performed under M&O contracts is intimately related to DOE's mission, is of a long-term and continuing nature, and, among other things, includes special requirements for work direction, safety, security, cost controls, and site management. The Department continues to use M&O contracts in accordance with Federal regulations[5] to conduct highly specialized and unique research, development, special production, and testing requirements associated with the DOE mission.

2 Sixteen laboratories are Federally Funded Research and Development Centers operated by private sector organizations under sponsoring agreements known as management and operating contracts and one laboratory is government-owned and operated.
3 FY2015 Department of Energy Congressional Budget Request.
4 FY 2013 Department of Energy Financial Report.
5 Federal Acquisition Regulation Subpart 17.6 Management and Operating Contracts.

FIGURE 1 – DEPARTMENT OF ENERGY MAJOR SITES

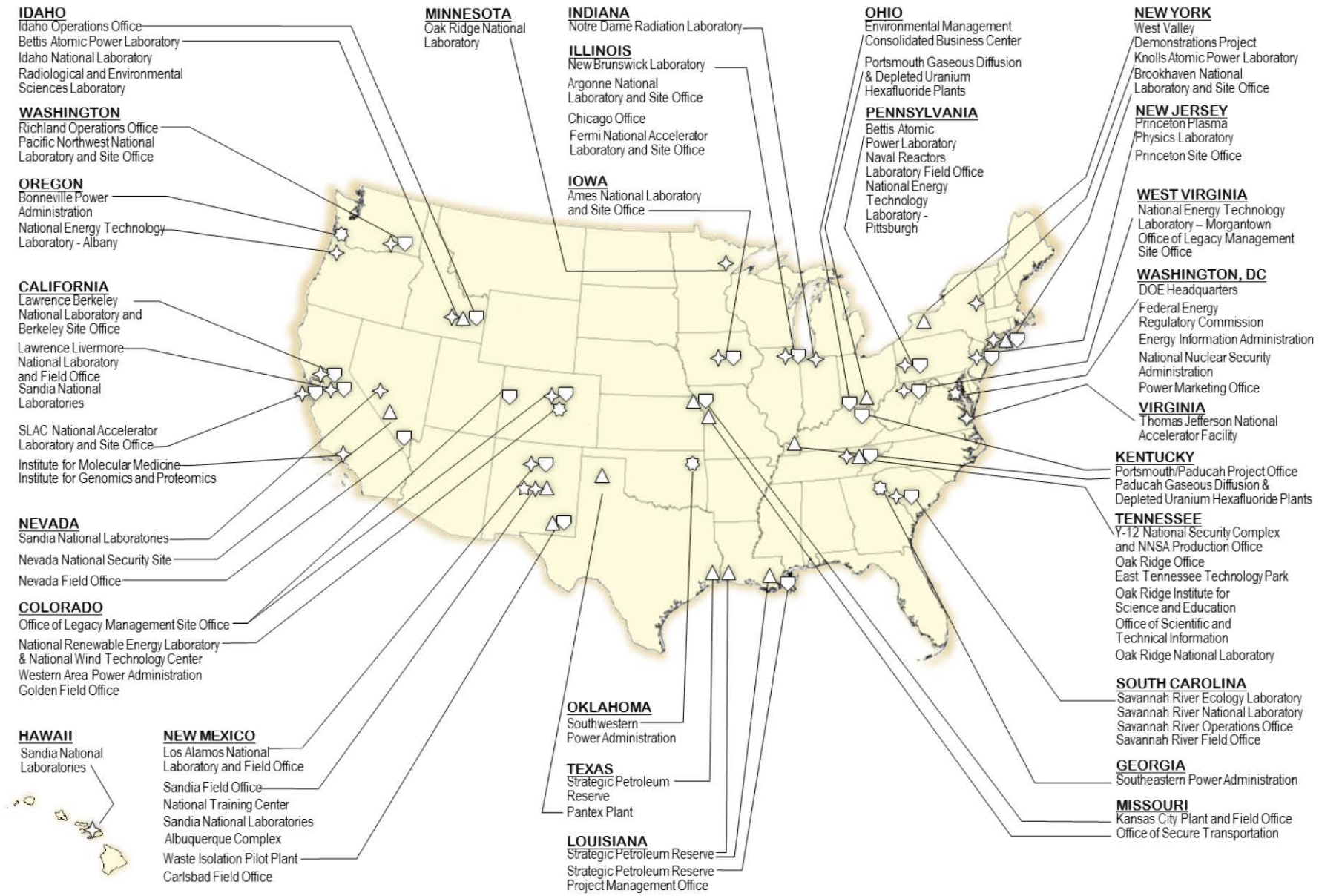


FIGURE 2 – ANTICIPATED LEGACY MANAGEMENT SITES THROUGH FY 2020

DOE's current mission is to enhance U.S. security and economic growth through transformative science, technology innovation, and market solutions to meet the nation's energy and environmental challenges[6]. DOE achieves its mission through an operational and programmatic framework that supports the following goals outlined in the 2014 – 2018 DOE Strategic Plan.

- **DOE Strategic Plan Goal 1: Science and Energy** – Advance foundational science, innovate energy technologies, and inform data-driven policies that enhance U.S. economic growth and job creation, energy security, and environmental quality, with emphasis on implementation of the President's Climate Action Plan to mitigate the risks of climate change and enhance resilience to it.

- **DOE Strategic Plan Goal 2: Nuclear Security** – Strengthen national security by maintaining and modernizing the nuclear stockpile and nuclear security infrastructure; reducing global nuclear threats; providing nuclear propulsion; improving physical and cyber security; and strengthening key science, technology, and engineering capabilities.

- **DOE Strategic Plan Goal 3: Management and Performance** – Position the Department to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities by employing effective management and refining operational and support capabilities to pursue Departmental missions. Managing assets in a sustainable manner that supports the DOE mission is a strategic objective under this goal.

The Department's organization is aligned to achieve these goals. Three DOE Under Secretaries manage the core functions that carry out the DOE mission, and several other mission support functions report to the Office of the Secretary (Figure 3).

- **Under Secretary for Nuclear Security** – Enhance the security and safety of the nation through national security endeavors; leverage science to maintain a safe, secure, and effective arsenal of nuclear weapons; accelerate and expand efforts to reduce the global threat posed by nuclear weapons, nuclear proliferation, and unsecured or excess nuclear materials; and provide safe and effective nuclear propulsion for the U.S. Navy.

- **Under Secretary for Science and Energy** – Manage and oversee research in physical, chemical, biological, and information sciences that provide fundamental scientific discoveries and technological solutions; identify and promote advances in fundamental and applied sciences; translate cutting-edge inventions into technological innovations; and accelerate transformational advances in energy areas.

- **Under Secretary for Management and Performance** – Oversee the largest cleanup effort in the world involving the remediation of an environmental legacy of over six decades of nuclear weapons research, development, and production; provide long-term surveillance and maintenance of remediated land and facilities; and administer staff functions such as human capital, information technology, contract and project management, and environment, safety, health, and security.

DOE Under Secretaries are ultimately responsible for the condition and safety of the property at their sites as well as its capability to meet mission needs. They carry out their programs and responsibilities through the NNSA and Program Offices. Departmental organizations with the significant property holdings include NNSA; the Office of Science (SC); the Office of Fossil Energy (FE); the Office of Energy Efficiency and Renewable Energy (EERE); the Office of Nuclear Energy (NE); the Office of Enterprise Assessments (EA); the Office of Environmental Management (EM); and the Office of Legacy Management (LM).

DOE organizational elements such as the FERC and PMAs also maintain property inventories. While the portfolios managed by FERC and the PMAs are not as large as those of NNSA and the Program Offices, the same management systems and tools are used to ensure effective property management and oversight.

6 United States Department of Energy Strategic Plan, 2014 – 2018.

FIGURE 3 – DEPARTMENT OF ENERGY ORGANIZATION

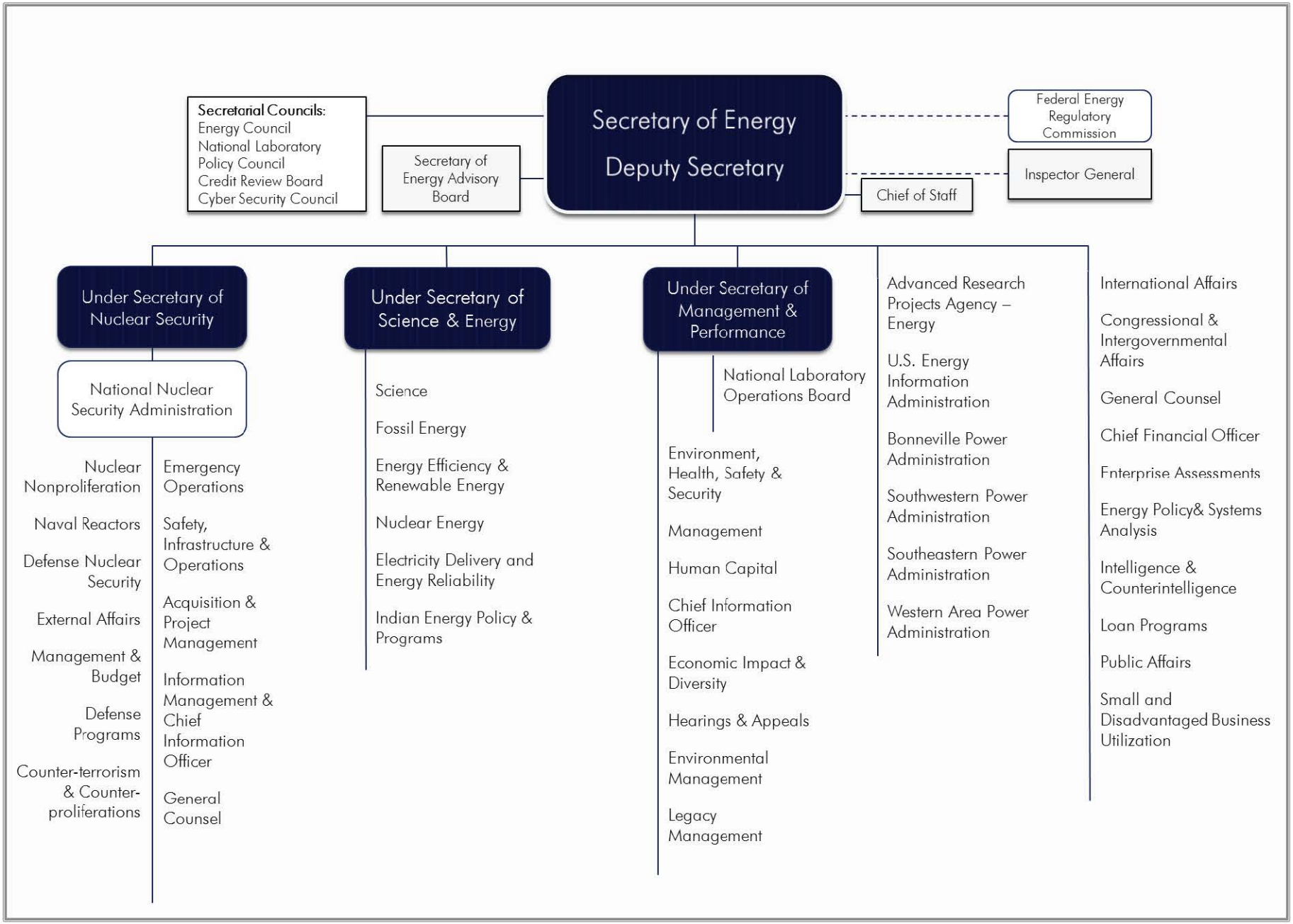
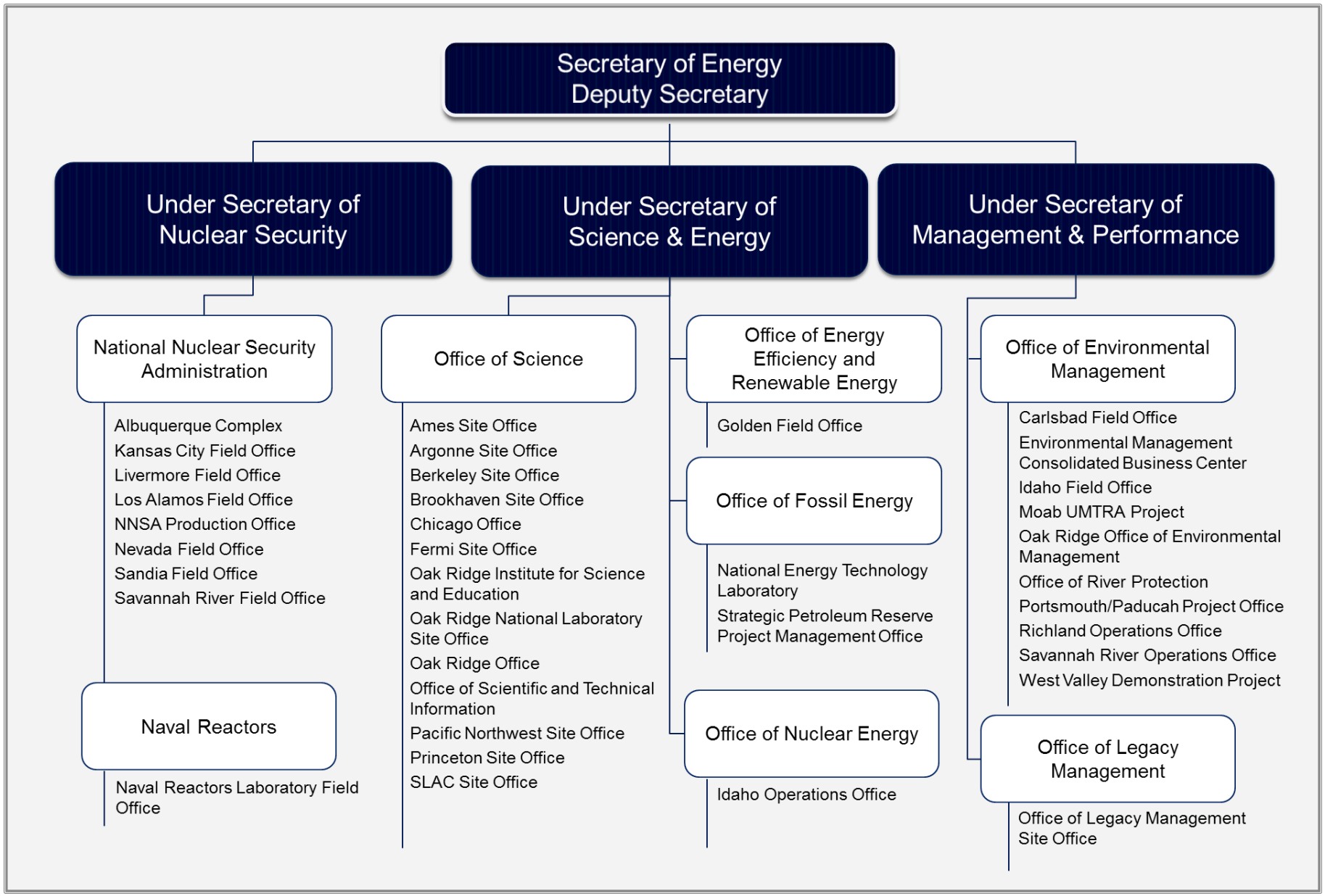


FIGURE 4 – DEPARTMENT OF ENERGY PROGRAM OFFICE SITE RESPONSIBILITY



Program Offices that have ownership responsibility for a site and overall facility asset management at that site are referred to as the Lead Program Secretarial Office. Program Offices that have responsibility for a facility at a site owned by another Program are referred to as Cognizant Secretarial Offices. The NNSA and Program Offices with lead responsibility at specific DOE sites are identified in Figure 4.

Mission success requires a commitment to excellence from DOE headquarters to every site office, service center, laboratory, and facility. Program Offices and sites develop and implement tailored approaches for asset management aligned with mission needs. At the core of this success is a highly qualified, capable, and flexible workforce that can execute the mission in a safe, secure, efficient, and sustainable manner. DOE carries out its mission using a well-trained workforce committed to maintaining a safe and secure work environment. The Department ensures its operations protect the environment, health, safety, and security of the surrounding communities.

STATE OF DEPARTMENTAL REAL AND PERSONAL PROPERTY ASSETS

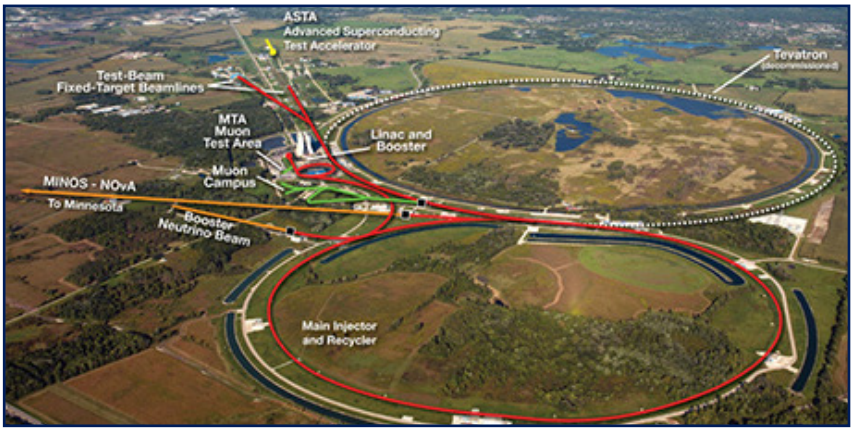
The Department's property assets constitute a significant capital investment. DOE's unique missions and associated needs rely on an inventory portfolio of property assets distributed to sites throughout the United States.

DOE classifies its property assets into two primary categories: real and personal property assets. Real property assets include buildings, real property trailers, structures, and land; and personal property assets consist of material, equipment, special tooling, motor vehicles, and similar property.

- **Real Property Assets** – DOE manages the Federal government's fifth-largest inventory of real property with an annual operating cost of $2.08 billion[7]. The Department maintains an inventory[8] of approximately 19,000 real property assets, including 9,000 buildings, 2,000 trailers, and 8,000 other structures and facilities covering an estimated 133 million square feet on 2.8 million acres of land[9]. The replacement plant value of these assets (not including land value) is approximately $114 billion. DOE's real property portfolio comprises diverse facilities, including unique fission reactors, accelerators, and high-performance lasers. However, much of DOE's property portfolio reflects an aging infrastructure originating in the 1940s as part of the Manhattan Project. DOE's challenge is to sustain, modernize, and effectively align real property assets with current and future mission requirements.

- **Personal Property Assets** – The department manages approximately $18.7 billion in personal property. This includes a fleet of DOE owned vehicles valued at an estimated $45 million in addition to annual vehicle leases valued about $83 million[10]. DOE's personal property portfolio includes equipment and furniture.

DOE maintains a portfolio of other key physical assets, including aviation and marine vehicles, records and information, classified and intellectual property, internal software and information technology, nuclear weapons, and nuclear materials. These assets, which are critical to Department operations, are managed through other management systems and processes in addition to those described in this plan.



Fermi National Accelerator Laboratory. The Fermi Accelerator Complex consists of four accelerators that work together to provide world-class particle beams for experiments at the Intensity Frontier.

7 FY2013 Federal Real Property Profile Summary Data.
8 DOE inventory includes the following real property: DOE owned and leased; GSA owned and leased; and contractor leased and licensed
9 FY 2013 Facilities Information Management System Annual Snapshot.
10 FY 2013 Federal Automotive Statistical Tool.

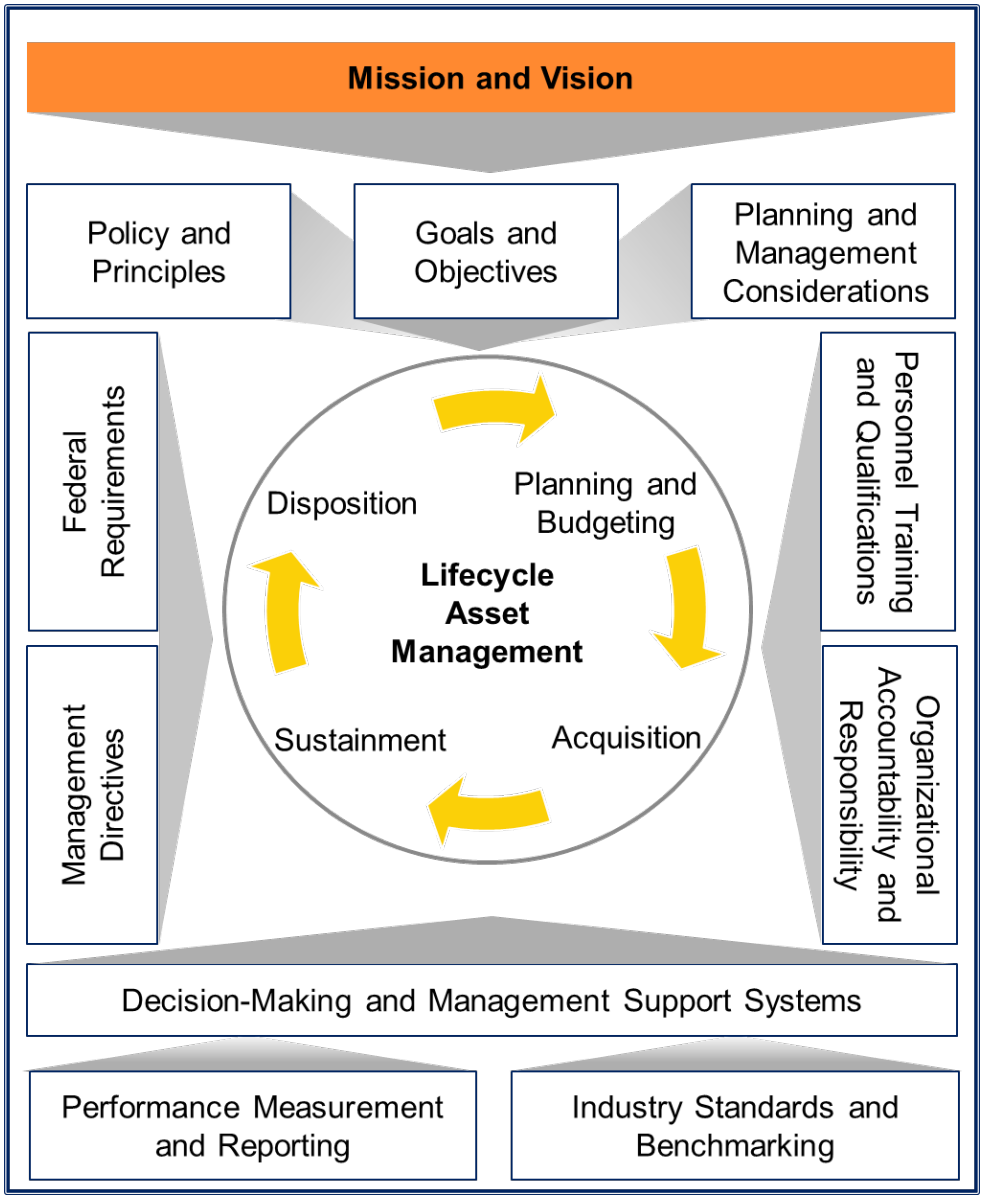
DEPARTMENTAL ASSET MANAGEMENT FRAMEWORK

The DOE Asset Management Plan is required by Executive Order 13327, *Federal Real Property Asset Management*. The Department's Asset Management Plan includes components common to real and personal property. These elements comprise the Department's asset management framework as depicted in Figure 5 and include:

- **Mission and Vision** – An aspirational declaration of the Department's core asset management purpose and a description of what DOE seeks to achieve.
- **Goals and Objectives** – The Department's desired asset management outcomes.
- **Policy and Principles** – Describes DOE's fundamental values and guides course-of-action development and decision-making for real and personal property management.
- **Planning and Management Considerations** – Unique considerations by DOE in planning, operating, and managing real and personal property assets.
- **Federal Requirements** – The primary set of Federal rules governing the acquisition, management, and disposal of real and personal property.
- **Management Directives** – DOE policy, directives (orders and guides), standards, and procedures governing property management.
- **Lifecycle Asset Management** – DOE's methodology for planning and budgeting, acquisition, sustainment, and disposal of real and personal property assets.
- **Personnel Training and Qualifications** – The Department's programs for the acquisition of knowledge, skills, and competencies needed for managing DOE assets.
- **Organizational Accountability and Responsibility** – Identification of DOE organizations and functions responsible for asset management.
- **Decision-Making and Management Support Systems** – Property information systems used in the selection of asset management courses of action.
- **Performance Measurement and Reporting** – DOE's approach to collecting, analyzing, and reporting the performance of the Department's real and personal property assets.
- **Industry Standards and Benchmarking** – Generally-accepted asset management practices and DOE's tailored processes for comparing its management of assets to these practices.

Each of these components is discussed and described in more detail in the remaining sections of the plan.

FIGURE 5 – DEPARTMENT OF ENERGY ASSET MANAGEMENT FRAMEWORK



DOE uses a comprehensive, performance-based approach to asset management. Key to this approach are a complete and accurate inventory, financial and performance data, continuous performance improvement through the use of best industry standards and benchmarks, consideration of costs and benefits throughout the asset lifecycle, and properly trained and certified property management professionals. The effective management of the Department's property assets requires the clear, concise, consistent, and continuous communication of all framework elements within DOE and between DOE and stakeholders. The Department relies upon other Federal agencies and the input of stakeholders including the public, local, state, and tribal governments.

The Department's approach to asset management reflects many of the practices widely recognized as effective by the public and private sector asset management communities. DOE continues to develop and implement innovative property management solutions by building and operating only the property required to execute DOE programs. This stewardship of DOE assets achieves the best value for American taxpayers.

ASSET MANAGEMENT MISSION AND VISION

The Department established an asset management mission and vision to emphasize the critical role of its property assets (Figure 6).

FIGURE 6 – ASSET MANAGEMENT MISSION AND VISION

MISSION	VISION
Manage assets in a safe, secure, cost-effective, and sustainable manner to support current and future DOE mission needs.	A portfolio of real and personal property assets that is appropriately sized and aligned to support efficient mission execution.

DOE has also established a core set of goals to guide the development and implementation of strategic and tactical asset management decisions.

ASSET MANAGEMENT GOALS

Accomplishing the Department's asset management mission and realizing its vision requires a focus on specific goals to guide planning, decision-making, and management. The Department has established four goals (Figure 7) to guide and evaluate management of its real and personal property assets.

FIGURE 7 – ASSET MANAGEMENT GOALS

GOAL 1 PROPERTY ALIGNMENT – Improve alignment of the property asset portfolio to meet current and future missions.

GOAL 2 PORTFOLIO MANAGEMENT – Maintain the portfolio of property assets in a condition to support mission requirements and provide a quality workplace.

GOAL 3 PERFORMANCE MANAGEMENT – Plan and manage the portfolio of property assets in a sustainable and cost-effective manner.

GOAL 4 PROPERTY ORGANIZATION – Ensure staff members have the proper training and access to property management resources.

The Department has developed real and personal property objectives that help achieve these goals. These are documented in the real and personal property sections of this plan.

DEPARTMENTAL ASSET MANAGEMENT POLICY AND GUIDING PRINCIPLES

The Department's asset management policy (Figure 8) strengthens the stewardship of DOE real and personal property assets. Key tenants of the policy include: ensuring assets are adequate to satisfy mission needs; encouraging the revitalization, reuse, and return of some assets to the American public; and engaging community members and other stakeholders in planning and decision-making. Incorporating the diverse ideas and values of stakeholders by involving the public, local, state, and tribal governments improves Departmental planning and decisions.

FIGURE 8 – ASSET MANAGEMENT POLICY

THE DEPARTMENT OF ENERGY SHALL:

- Manage all of its property as valuable national resources in a cost effective manner.
- Maintain accurate inventories, credible condition assessments, appropriate capacity and utilization, reliable measurements, and repeatable processes.
- Use industry standards and benchmarks for continuous improvement.
- Prioritize investments based on lifecycle cost benefit analyses, best practices, and validated data to guide enterprise-wide decisions.
- Involve stakeholders in property planning and implementation by considering local site conditions as well as the larger regional context in property decisions.
- Ensure the acquisition, sustainment[11], reuse or disposal of property assets support critical missions, stimulate the economy, and protect workers, the public, and the environment.

Guiding property management principles are used to implement the DOE asset management policy. The DOE asset management guiding principles (Figure 9) are adopted from the Federal Real Property Council management principles for real property and the guiding principles for personal property management from the General Services Administration (GSA). These principles are reflected in the goals, objectives, and practices used by the Department to plan and manage real and personal property assets.

FIGURE 9 – ASSET MANAGEMENT GUIDING PRINCIPLES

- Support DOE's missions and strategic goals.
- Provide for safe, secure, and healthy workplaces.
- Use public and commercial benchmarks and best practices.
- Employ lifecycle cost-benefit analysis in decision making.
- Promote full and appropriate utilization.
- Dispose or repurpose unneeded assets.
- Provide appropriate levels of investment.
- Record inventory and describe all assets accurately.
- Acquire only what the mission demands.
- Reuse, recover, recycle, and conserve resources.
- Employ balanced performance measures and self-assessments.
- Satisfy customers.
- Ensure property managers are well trained.

11 Sustainment is defined as maintenance and repair activities necessary to keep the inventory of facilities in good working order. This includes regularly scheduled maintenance as well as anticipated major repairs or replacement of components that occur periodically over the expected service life of the facilities.

DEPARTMENTAL ASSET MANAGEMENT CONSIDERATIONS

The unique nature of the DOE's mission and property inventory requires special consideration of the Department's asset portfolio management. These considerations include:

- **Environment, Safety, and Health (ES&H)** – Execution of the DOE mission requires the protection of workers, the public, environment, and national security assets. This includes unique worker safety considerations associated with both nuclear and non-nuclear property assets involving energy research, environmental cleanup, and nuclear security. Robust assurance systems are effectively implemented by site contractors for DOE-effective environment, safety, and health assurance systems and oversight programs provide reasonable assurance that Departmental mission objectives are being accomplished using property assets without sacrificing adequate protections. Assurance systems are tailored to meet the needs and unique risks of each site or activity. These systems include methods to perform rigorous self-assessments, conduct feedback and continuous improvement activities, identify and correct negative performance trends, and share lessons learned. DOE oversight programs are designed and conducted commensurate with the level of risk of the activities. The oversight of activities with potentially high consequences[12] is given high priority and greater emphasis. Effective and properly implemented oversight processes and assurance systems result in protection of workers, the public, and environment while mission objectives are met.

- **Safeguards and Security** – DOE management of real and personal property assets includes addressing a unique set of safeguards and security concerns associated with the nuclear weapons complex and other Departmental facilities in support of research and development and environmental cleanup. DOE continues to implement security improvements through its senior leadership, worker and stakeholder engagement, and use of operational experience to establish and strengthen lines of communication, seek feedback, and resolve concerns. DOE program and staff offices continue to validate the technical basis and soundness of their safeguards and security programs within the context of the reforms. Training is provided when necessary and independent oversight activities are focused on sites and laboratories that maintain significant amounts of special nuclear material and classified information. The Department also continues to reduce site and laboratory security footprints to meet the graded security protection policy by consolidating and improving special nuclear material storage facilities, eliminating or releasing facilities that previously required safeguarding, and restructuring security management systems. DOE continues to conduct safeguards and security self-assessments and implement independent oversight and classified information security enforcement programs. Lessons learned and findings from the assessments, inspections, and reviews are used to implement security reforms and corrective actions to address program weaknesses. Effective levels of security expertise are maintained throughout the Department by providing security training and professional development programs through the National Training Center.

- **Cultural and Natural Resources and Historic Preservation** – DOE has a long history of managing cultural and natural resources on its lands. The Department recognizes the role that the preservation of historic sites, buildings, structures, and objects plays in enhancing community growth and advancement. DOE continues its leadership role in historic preservation by considering preservation of historic resources in planning, decision-making, and program

B Reactor at Hanford. One of the most historic buildings at Hanford is the B Reactor, the world's first, full-scale nuclear reactor and used to produce the plutonium in the "Fat Man" bomb dropped over Nagasaki, Japan, in August of 1945.

12 These activities include, but are not limited to, Hazard Category 1, 2 and 3 nuclear facilities and activities to protect strategic quantities of special nuclear material and highly sensitive information assets.

and project execution. DOE historic preservation stewardship includes managing over 1,200 buildings, structures or land parcels evaluated[13] as eligible for the National Register of Historic Places and 10 buildings and structures listed on the register. The Department maintains six National Historic Landmark buildings.

- **Socio-Economic Responsibility** – DOE has a significant impact on the communities where its research laboratories, sites, and field offices are located. The Department remains committed to conducting research and development operations in an ethical manner while contributing to the economic prosperity of surrounding communities. DOE continues to improve the quality of life of the workforce, workers' families, and the general public by supporting the regional economic diversification of local economies around DOE sites. For example, DOE disposes of unneeded and excess personal property, repurposes and reuses existing facilities, and encourages scientific and technology outreach and commercialization to support regional economies. DOE takes this socio-economic responsibility seriously by ensuring the work of its scientists and engineers is carried out in a safe and socially and fiscally responsible manner.

- **Climate Change and Sustainability[14]** – An increasingly complex global environment has brought sharp focus to the relationships between energy security, climate change, and national security. DOE adheres to sustainable guiding principles for integrated design, energy and water conservation, and indoor environmental quality. The Department's efforts reduce the total cost of facilities, improve energy efficiency and water conservation, provide safe environments, and promote sustainable environmental stewardship. For example, DOE has successfully applied the state-of-the-art commercial standard of the Leadership in Energy and Environmental Design (LEED®) to many new construction projects since 2008. LEED is an industry-recognized standard for energy, environment, and efficiency, and requires use of modern approaches to design and construction, such as use of building energy models and associated lifecycle and cost-saving calculations. Despite DOE's unique facility types, such as microelectronics, ion beams, and radiological laboratories, many facilities meet LEED standards. The Department of Energy Climate Change Adaptation Plan[15] describes DOE's vision for climate change adaptation as the integration of risk based resiliency to address identified climate change vulnerabilities across all DOE programs and policies. Assessment of climate change vulnerabilities, informed by best available science, is a deliberate consideration of DOE's planning activities.

Research Support Facility at the National Renewable Energy Laboratory (NREL). NREL's Research Support Facility, completed in 2010, is a sustainable green building. This 218,000 square foot office building includes a rooftop photovoltaic system, daylighting, natural ventilation, and a next-generation, energy efficient data center.

13 Per 36 CFR Part 60 with concurrence of the cognizant Historic Preservation Officer.

14 Sustainability is broadly defined as those actions taken to maximize energy and water efficiency; minimize chemical toxicity and harmful environmental releases, particularly greenhouse gases; promote renewable and other clean energy development; and conserve natural resources while sustaining assigned mission activities.

15 2014 Department of Energy Climate Change Adaptation Plan

ORGANIZATIONAL RESPONSIBILITY AND ACCOUNTABILITY FOR ASSET MANAGEMENT

The effective planning, acquisition, sustainment, and disposal of the Department's real and personal property assets requires the commitment of the entire organization, including leadership and staff at DOE headquarters and site, field, and operations office[16] locations. Clear assignment of responsibility and accountability for capital investment, stewardship, and divestment are integral to producing measurable and sustainable results. DOE property management responsibility and accountability starts at the top of the Department with the Secretary and Deputy Secretary. The Secretary establishes Departmental policy for real and personal property management, authorizes actions to acquire interest in property, and may accept donations of property. The Deputy Secretary is responsible for overseeing the asset management system and program implementation by Departmental elements. The key DOE organizations and positions responsible for real and personal property management are summarized in Figure 10.

Two senior executive level committees guide and advise Departmental property management. The Facilities and Infrastructure Executive Steering Committee is a group of senior-level DOE Program Office representatives with responsibility for real property assets. The committee guides real property asset management in the Department and promotes the resolution of cross-program issues. DOE personal property decision-making and management is supported by the Personal Property Management Executive Steering Committee to ensure decisions are implemented in accordance with established policy. The committee provides a forum for the dissemination of personal property best practices, and coordination and communication of crosscutting personal property issues. Comprised of key senior executives with significant stewardship responsibility for personal property throughout the Department, the committee is responsible for establishing strategic goals, performance measures, and initiatives to improve the accountability, efficiency, and effectiveness of the Department's personal property management program through integration, collaboration, and information-sharing.

The Department's National Laboratory Operations Board is also focusing on infrastructure needs, ways to fully leverage available acquisition methods, and strategies for mitigating the costs and risks associated with the Department's excess contaminated real property. The Board has established working groups responsible for developing enterprise-wide infrastructure strategies in these focus areas. Initial efforts resulted in improved understanding of existing infrastructure functionality and utilization as well as the link between that infrastructure and the Department's core capabilities. Methodologies will be institutionalized in the Department's real property decision-making and management support systems and planning and budgeting guidance.

16 DOE site office, field office and operations office terms are used interchangeably. These terms refer to locations where DOE missions are conducted and overseen by Federal personnel.

FIGURE 10 – KEY DOE ORGANIZATIONS AND POSITIONS RESPONSIBLE FOR PROPERTY MANAGEMENT

Key DOE Organizations and Positions Responsible for Property Management

Headquarters Organizations

Lead Program/Cognizant Secretarial Office

- Assign qualified property management staff.
- Ensure Federal accountability for the proper stewardship of real and personal property assets.
- Provide annual program direction, guidance, and oversight for property management implementation.
- Review and accept TYSP, SSP, and FIMS data submitted by the site/field office managers.

Office of Acquisition/Project Management

- Principal point of contact for real and personal property management policy and directives.
- Provide independent review for implementation of asset management requirements.
- Interpret policy/directives and advise property-holding programs and support offices.
- Develop and administer asset management systems, training, and certifications.

Office of Chief Financial Officer

- Develop and implement budget formulation and execution, finance and accounting policy and systems for assets.
- Implement finance and accounting systems for the reporting of assets.
- Review and coordinate economic development sales and leases, land sales for less than fair market value.
- Review and coordinate DOE asset transfer issues.

Office of Environment, Health, Safety and Security

- Principal point of contact for environment, health, safety and security policies, directives and requirements.
- Provide expert advice and implementation assistance to protect workers, the public and the Department's material and information assets.

Sustainability Performance Office

- Principal point of contact for sustainability including goals, requirements and greenhouse gas reduction targets.
- Oversee sustainability efforts, including environmental, energy, and economic performance.
- Develop Strategic Sustainability Performance Plan.

Real and Personal Property Personnel

Site/Field Office Manager

- Oversee implementation of asset management requirements.
- Identify and report all real and personal property assets.
- Prepare and submit TYSP, SSP, and FIMS data for acceptance.
- Monitor asset management implementation.

Contracting Officer

- Appoint property administrators for contracts containing government-furnished property.
- Ensure contractors implement applicable property management requirements.
- Oversee review and approval of contractor property management systems.

Acquisition Executive

- Approve critical decisions for capital asset projects.
- Approve the appointment of Federal project directors.
- Approve project changes in compliance with change-control levels.
- Conduct quarterly project reviews.

Real Property Personnel

Senior Real Property Officer

- Certify real property inventory accuracy and completeness.
- Establish policy to improve operational and financial real property management.
- Annually submit information describing real property assets.
- Monitor real property assets for alignment with DOE strategic plan.
- Measure and report real property performance.

Federal Project Director

- Serve as the single project point of contact between Federal and contractor staff.
- Define project cost, schedule, scope, and performance baselines.
- Evaluate and verify reported project progress.
- Ensure safety, security, health, and quality compliance of work.

Certified Realty Specialist

- Plan, analyze, develop, implement, and interpret policy to complete real estate transactions.
- Review and approve real estate actions to acquire, manage, and dispose of real property assets.
- Support negotiations for land rights, including easements, leases, permits, and fee acquisition.

Personal Property Personnel

Personal Property Executive/National Utilization Officer

- Develop and administer personal property programs.
- Promote acquisition/use of excess personal property.
- Serve as the technical expert on personal property disposal.
- Facilitate the redistribution, donation, exchange, sale, and abandonment of unneeded and excess personal property.
- Authorize the disposal of personal property.
- Serve as Departmental Motor Fleet managers.

Organizational Property Management Officer

- Establish and administer personal property management programs within organizations.
- Provide planning, acquisition, control, management, and disposition of personal property in offices.
- Conduct oversight and periodic management reviews of personal property management activities.

Property Administrator

- Develop and implement a personal property management oversight program.
- Advise contracting officer and organizational property management officer of contractor non-compliance.

Organizational Motor Equipment Fleet Manager

- Develop and implement motor equipment policy.
- Conduct oversight of the motor equipment program.
- Review utilization and reassign or dispose of underutilized motor equipment.

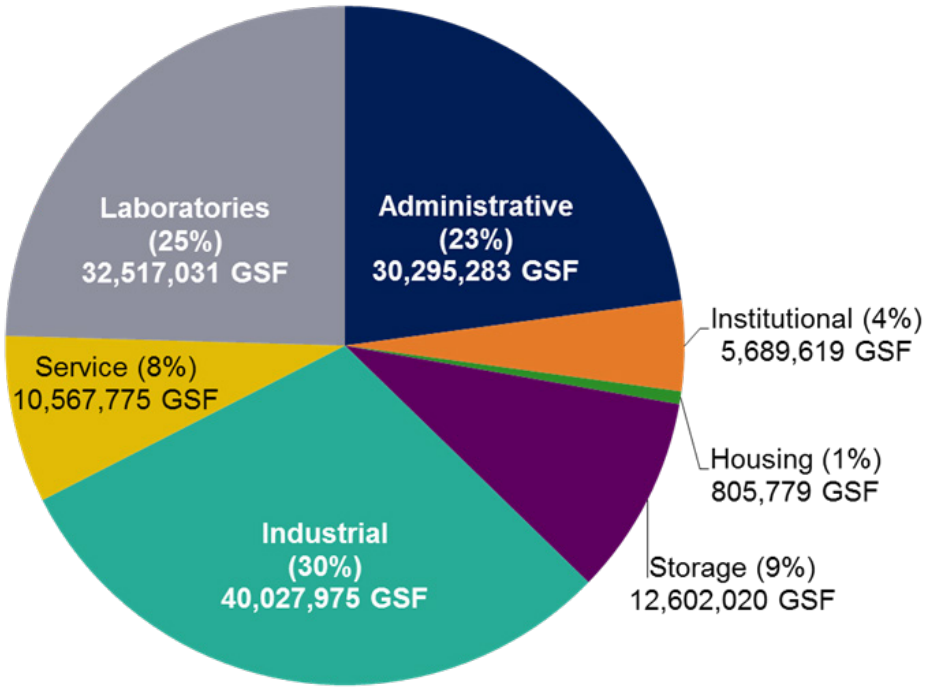
MANAGEMENT OF REAL PROPERTY ASSETS

Real property assets are critical to accomplishing the DOE mission in a safe, secure and cost effective manner. The Department uses a comprehensive, integrated, and performance-based approach to real property asset management. This includes maintaining a complete and accurate inventory of real property assets and their condition, aligning assets with defined mission needs, and measuring and reporting the performance of the real property assets.

REAL PROPERTY ASSETS

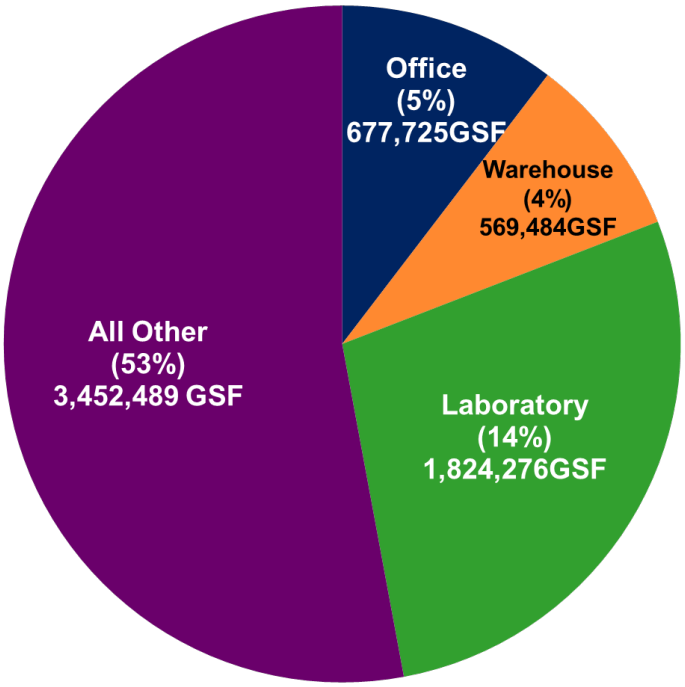
DOE real property assets include real estate (land); improvements to the land such as buildings, trailers, and structures; and equipment related to construction. Buildings, trailers, and structures are often referred to as facilities or infrastructure. Based on gross square feet (GSF), the Department's major facilities are categorized as follows: industrial, laboratories, administrative, storage, service, institutional, and housing. Based on Fiscal Year (FY) 2013 data, DOE industrial, laboratories, and administrative facilities represent over 75 percent of DOE's real property inventory (Figure 11).

FIGURE 11 – DOE REAL PROPERTY FACILITY SUMMARY BY FACILITY CATEGORY



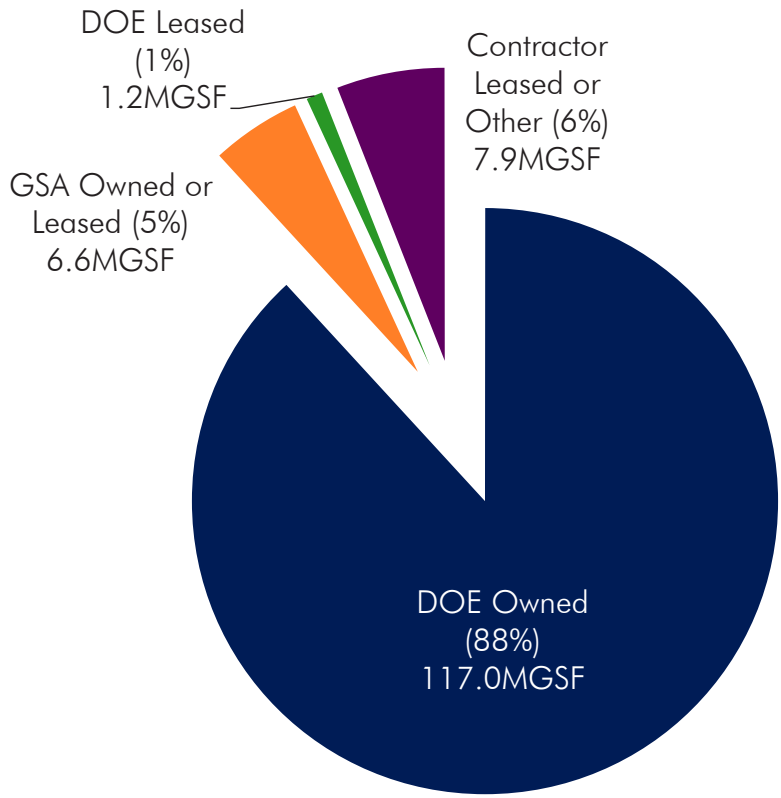
The Department's real property facility portfolio includes approximately 6.6 million gross square feet of excess, unutilized, and underutilized facilities as depicted in Figure 12. This real property inventory includes approximately 5,000 excess contaminated facilities (nuclear reactors, chemical separation facilities, hot cells, and radiological laboratories).

FIGURE 12 – DOE EXCESS, UNUTILIZED AND UNDERUTILIZED REAL PROPERTY BY FACILITY CATEGORY



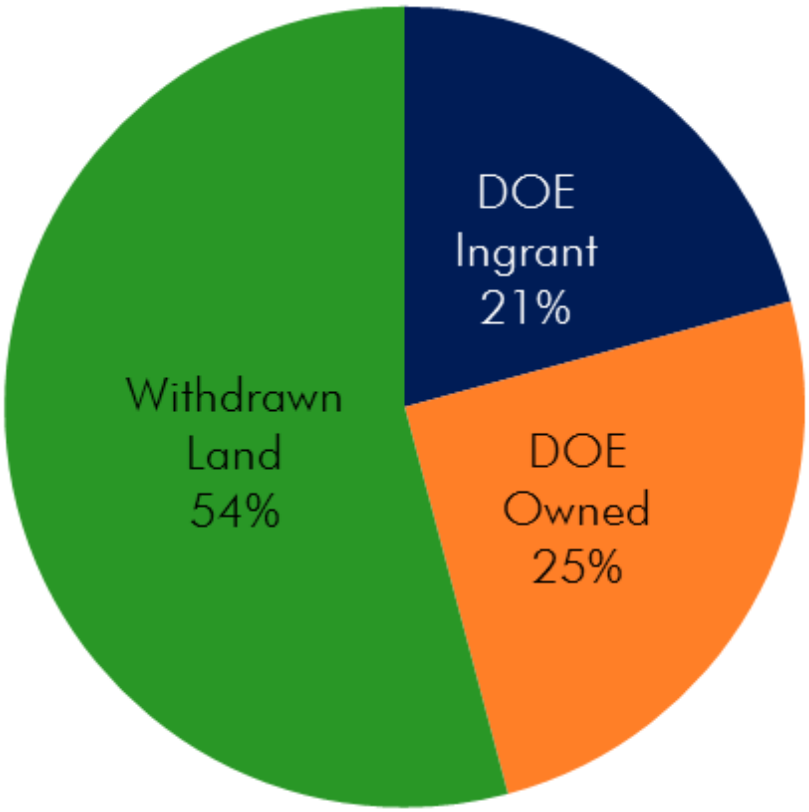
The vast majority of the Department's portfolio is federally-owned directly by DOE (88 percent). Real property owned or leased by the General Services Administration represents roughly 5 percent of DOE's portfolio. The remainder of the portfolio (7 percent) is made up of leases directly held by DOE or contractor leases specifically approved to support and achieve one or more of DOE's missions. (Figure 13)

FIGURE 13 – DOE REAL PROPERTY FACILITY SUMMARY BY OWNERSHIP CATEGORY



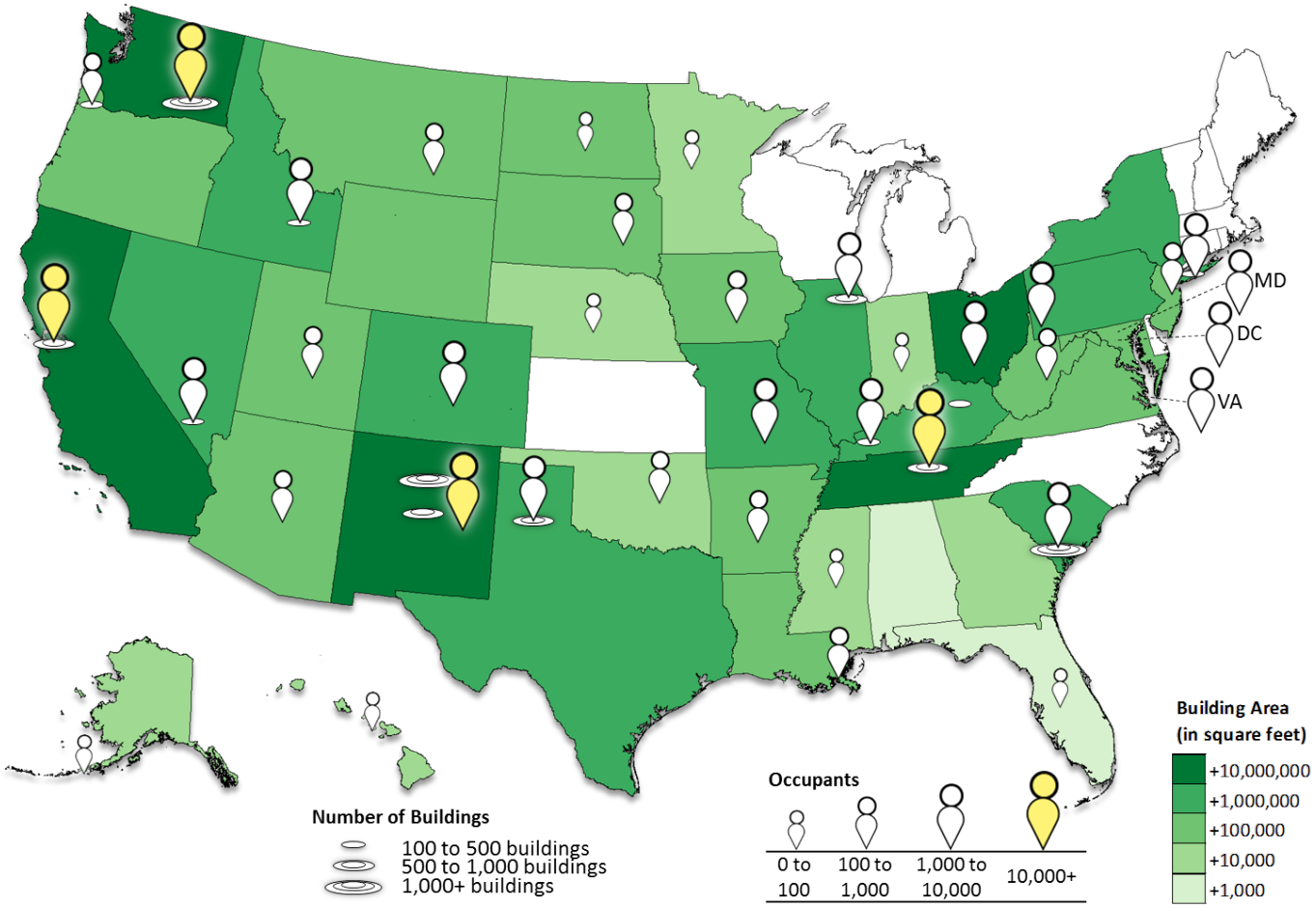
The Department's land holdings comprise about 2.8 million acres and include DOE owned land[17], in addition to DOE ingrant land[18] and withdrawn land[19] (Figure 14). Withdrawn land no longer needed is typically returned to the U.S. Department of the Interior.

FIGURE 14 – DOE REAL PROPERTY ACREAGE BY LAND CATEGORY



17 DOE owned land is fee title real property acquired through purchase, condemnation or donation.
18 DOE ingrant land is a right acquired by DOE or its contractors for the use of real property of others by means such as a lease, license, easement, or permit.
19 DOE withdrawn land is land withdrawn from the public domain for DOE's use.

FIGURE 15 – DOE REAL PROPERTY ASSET DISTRIBUTION BY STATE



FEDERAL REQUIREMENTS

DOE's real property planning and management is governed by the following Federal requirements:

- **Executive Order 13327**, Federal Real Property Asset Management –Establishes requirements to improve the management of Federal real property; promote the efficient and economical use of real property assets; ensure management accountability for implementing Federal real property management reforms; enhance management attention by establishing the position of Senior Real Property Officer; establish clear goals and objectives; and improve policies and levels of accountability.

- **Executive Order 13653**, Preparing the United States for the Impacts of Climate Change – Directs Federal agencies to take a series of steps to make it easier for American communities to strengthen their resilience to extreme weather and prepare for other impacts of climate change.

- **Executive Order 13693**, Planning for Federal Sustainability in the Next Decade –Establishes requirements to reduce greenhouse gas emissions; sets sustainability goals for building energy use, agency water use, motor vehicle and fleet efficiency, and building performance; directs actions to promote sustainable acquisition and procurement, advance waste prevention and pollution prevention, and to implement performance contracts for Federal buildings.

- **Federal Property and Administrative Services Act of 1949** – Establishes the Federal government requirements for: procuring and supplying property and non-personal services; using available property; disposing of surplus property; and records management.

- **Energy Policy Act of 2005** – Establishes energy management goals for Federal facilities and fleets while also amending portions of the National Energy Conservation Policy Act (NECPA). Sets Federal energy management requirements in the areas of: metering and reporting, energy efficient product procurement, Energy Savings Performance Contracts (ESPC), building performance standards, renewable energy requirements, and alternative fuel use.

- **Energy Independence and Security Act of 2007** – Establishes energy management goals and requirements while amending portions of NECPA. Sets Federal energy management requirements in the areas of: energy reduction goals for Federal buildings, facility management/benchmarking, performance and standards for new buildings and major renovations, High Performance Buildings, ESPCs, metering, energy efficient product procurement, OMB reporting, reducing petroleum/increasing alternative fuel use.

- **Code of Federal Regulations** – Establishes Federal requirements specific to real property management such as 10 CFR Part 770, Transfer of Real Property at Defense Nuclear Facilities for Economic Development for disposal of real property at defense nuclear facilities; 41 CFR Chapter 102, Public Contracts and Property Management for real estate acquisition, facility management, historic preservation, real property inventories and disposal; 48 CFR Part 570, Acquiring Leasehold Interests in Real Property for establishing lease interests in real property; 23 CFR Part 650, Bridges, Structures and Hydraulics for inspections of public access vehicle bridges; and 49 CFR Part 213, Track Safety Standards for inspections of train bridges.

- **Presidential Memorandum, Disposing of Unneeded Federal Real Estate** – Increasing Sales Proceeds, Cutting Operating Costs, and Improving Energy Efficiency – Directs executive departments and agencies to accelerate efforts to identify and eliminate excess properties. Management Procedures Memorandums such as "Freeze the Footprint" and "Reduce the Footprint" provide implementation guidance.

- **National Strategy for the Efficient Use of Real Property, 2015-2020** – Establishes a clear strategic framework to guide agencies' real property management, to increase efficient real property use, control costs, and reduce real property holdings.

- **Office of Management and Budget (OMB)** – OMB Circular A-11, Preparation, Submission and Execution of the Budget and Capital Programming Guide, Planning, Budgeting and Acquisition of Capital Assets provides direction in areas such as real property budget development and execution.

Los Alamos Canyon Bridge. Constructed in 1951, the Los Alamos Canyon Bridge is a historic structure and a main transportation route between Los Alamos and the laboratory.

- **Federal Accounting Standards Advisory Board, Accounting for Property, Plant and Equipment** – Establishes accounting requirements for programmatic, managerial, administrative, and other program costs incurred during the property, plant and equipment lifecycle, decisions regarding cost information, and acceptable methods for recognizing costs.

- **Guiding Principles for High Performance Sustainable Buildings** – Provides a common set of sustainable guiding principles for integrated design, energy performance, water conservation, indoor environmental quality, and materials to reduce the total ownership cost of facilities; improve energy efficiency and water conservation; provide safe, healthy, and productive built environments; and promote sustainable environmental stewardship.

- **Federal Buildings Personnel Training Act** – Identifies the core competencies necessary for Federal personnel performing building operations and maintenance, energy management, safety, and design functions to comply with requirements under Federal law, including competencies relating to sustainability, water efficiency, electrical safety, and building performance measures; identifies a course, certification, degree, license or registration, and training to demonstrate each core competency for the appropriate category of personnel; requires individuals in each category to demonstrate each core competency identified for the category within one year; and directs the Secretary of Energy each year to develop a recommended curriculum relating to facility management and the operation of high-performance buildings.

DEPARTMENTAL MANAGEMENT DIRECTIVES

Planning and management of DOE property assets requires compliance with laws, regulations, Departmental management directives, and other Federal requirements. While these requirements provide a governance framework, the Department implements the requirements through a series of directives in policies and orders to establish consistent real property processes and decision-making across programs and sites. These policies and orders define roles and responsibilities and establish reporting requirements for real property planning and management. Following are the general provisions of DOE's key real property management directives:

- **DOE Order 430.1B, Real Property Asset Management** – Establishes the Department's lifecycle approach to real property asset management by linking planning, programming, budgeting, and evaluation to program mission projections and performance outcomes.

- **DOE Order 413.3B and Associated Guides, Program and Project Management for the Acquisition of Capital Assets** – Assigns responsibility to Federal program and project managers to ensure capital asset projects are managed with integrity and comply with applicable laws. Key components include a decision framework for acquisition management; roles and responsibilities for managers at all levels; and requirements for project documentation, project reviews, and reporting at each project phase.

- **DOE Order 436.1, Sustainability** – Provides requirements for managing sustainability to ensure the Department carries out its missions in a sustainable manner that addresses national energy security and global environmental challenges, and advances sustainable, efficient, and reliable energy for the future; institute changes to factor sustainability and greenhouse gas reductions into all DOE corporate management decisions; and ensure DOE achieves the sustainability goals.

- **DOE Order 433.1B, Maintenance Management Program for DOE Nuclear Facilities** – Establishes the requirement for all nuclear maintenance management programs to contain a DOE-approved Maintenance Implementation Plan to ensure nuclear facilities operate inside a zone of safety to protect workers, the public, and environment from the risk of radiological exposure.

- **DOE Order 458.1, Radiation Protection of the Public and the Environment** – Establishes requirements to protect the public and environment against undue risk from radiation associated with DOE radiological activities. Provides well-defined and documented criteria for the release and clearance from DOE control of real and personal property with the potential to contain residual radioactivity, and identifies integration of property control and clearance needs into management systems.

- **DOE Policy 141.1, Management of Cultural Resources** – Provides direction on the integration of cultural resources management into missions and activities by requiring DOE to identify, evaluate, and manage cultural resources under its control and jurisdiction.

ASSET MANAGEMENT GOALS AND ASSOCIATED REAL PROPERTY OBJECTIVES

The Department has established real property objectives that support each of the four asset management goals (Figure 16).

FIGURE 16 – ASSET MANAGEMENT GOALS AND SUPPORTING REAL PROPERTY OBJECTIVES

GOAL 1 PROPERTY ALIGNMENT – IMPROVE ALIGNMENT OF THE PROPERTY ASSET PORTFOLIO TO MEET CURRENT AND FUTURE MISSIONS.

- Assess real property assets against program requirements to meet current and future mission needs.
- Improve real property asset condition and utilization survey methods to optimize use of existing inventory.
- Implement and improve a knowledge-based approach to conduct facility condition assessments based on ownership, status, and accessibility.

GOAL 2 PORTFOLIO MANAGEMENT – MAINTAIN THE PORTFOLIO OF PROPERTY ASSETS IN A CONDITION TO SUPPORT MISSION REQUIREMENTS AND PROVIDE A QUALITY WORKPLACE.

- Plan, construct, sustain, and recapitalize facilities and infrastructure to support mission execution.
- Evaluate acquisition methods in the planning process when analyzing alternatives.
- Increase sustainment investments in real property to maximize utilization, stabilize deferred maintenance and reduce lifecycle costs.
- Dispose of excess and unneeded property safely, efficiently, and in a timely manner.
- Provide for safe, secure, and healthy workplaces.

GOAL 3 PERFORMANCE MANAGEMENT – PLAN AND MANAGE THE PORTFOLIO OF PROPERTY ASSETS IN A SUSTAINABLE AND COST-EFFECTIVE MANNER.

- Improve real property lifecycle cost identification, collection, and management.
- Use performance measures to improve real property management.
- Improve real property data to ensure it is complete and accurate.
- Manage, integrate, and prioritize real property capital investment requirements enterprise-wide to improve planning, programming, acquisition, and disposal decisions.
- Implement real property benchmarking.

GOAL 4 PROPERTY ORGANIZATION – ENSURE STAFF MEMBERS HAVE THE PROPER TRAINING AND ACCESS TO PROPERTY MANAGEMENT RESOURCES.

- Establish Federal Real Property Officers responsible for real property asset management implementation.
- Implement a real property management professional development program.
- Improve communications with sponsors and customers.
- Develop and implement a recognition program for real property management excellence

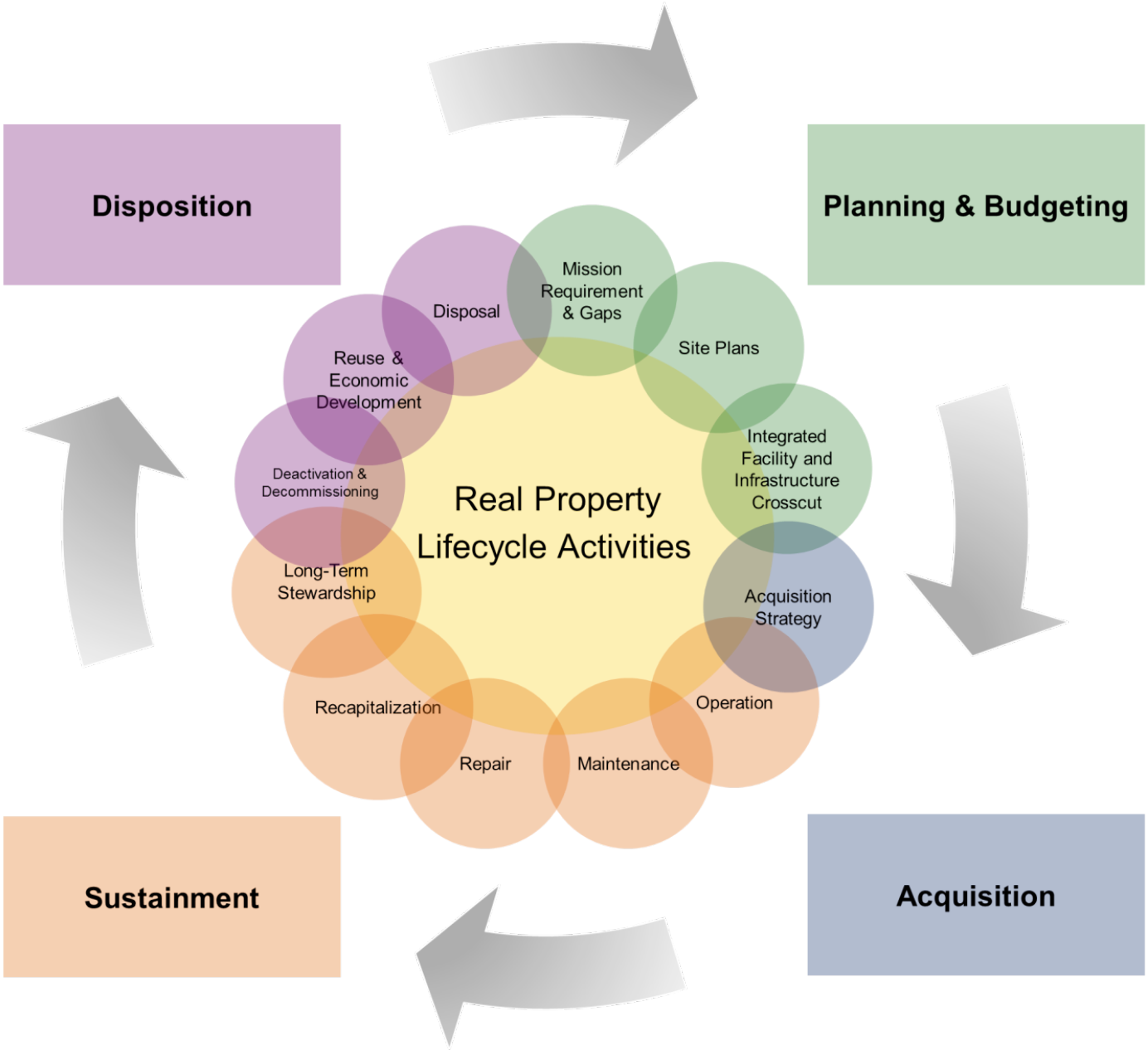
The real property goals and objectives are aligned with the Department's mission needs and as needs change, the property goals and objectives are revised and updated accordingly. DOE monitors the achievement of goals and objectives through the use of performance measures.

LIFECYCLE ASSET MANAGEMENT

The Department developed and implemented a comprehensive, integrated, and performance-based approach to real property lifecycle asset management that links real property asset planning, programming, budgeting, and evaluation to program mission projections and performance outcomes. Real property acquisitions, sustainment, recapitalization, and disposal are balanced to ensure real property assets are in a suitable condition and available for use to accomplish DOE's mission. The details of lifecycle facilities management are more fully discussed in DOE Orders 430.1B and 413.3B. The key to effective real property management is broadening the planning process to include assets in all phases of the

facility lifecycle. The main components of the lifecycle facilities management process include planning and budgeting, acquisition, sustainment, and disposition (Figure 17). The following sections describe each of these components.

FIGURE 17 – REAL PROPERTY LIFECYCLE ASSET MANAGEMENT



- **Planning and Budgeting** – DOE management of real property assets includes comprehensive and integrated planning that starts with the Department's Strategic Plan. DOE's real property asset management planning, programming, and budgeting ensures current and future mission needs are met in a cost-effective manner. Planning is dependent on clear mission requirements and mission-need statements, sound data, and effective communication. Analysis of alternatives is conducted for mission needs and associated requirements to ensure cost-effective solutions are implemented.

  The cornerstone of DOE real property planning is the Ten Year Site Plan (TYSP). As currently configured, TYSPs address how an individual site's real property assets support the Department's strategic plan and how that site intends to implement planning and budgeting guidance. TYSPs prioritize real property asset including new acquisitions, maintenance, recapitalization, disposition, and long-term stewardship requirements.

In addition, they provide a big picture view of the current portfolio at the site and address the asset utilization optimization, potential to reduce costs by consolidating operations where practicable, and opportunities to eliminate excess facilities.

An integral part of real property planning is the Site Sustainability Plan (SSP). Each DOE site is responsible for developing and implementing an annual SSP that identifies contributions toward meeting the Department's sustainability goals. The SSP documents sustainability goals, identifies appropriate personnel resources, establishes an appropriate financing plan, and includes a timeline for execution coupled with specific performance measures and deliverables. Sites use energy savings performance contracts to execute renewable energy, energy efficiency, water efficiency, high performance sustainable building, pollution prevention, and other sustainability projects. DOE submits a Strategic Sustainability Performance Plan (SSPP) each year to OMB and the Council on Environmental Quality. The SSPP describes the Department's actions to achieve its sustainability goals.

Land use is a key component of the DOE's real property planning process. DOE land-use plans examine multiple land-use options by describing site issues, capabilities, opportunities, and limitations. Land necessary to support the site mission is identified and plans are maintained to support the requirements identified in TYSPs. At cleanup and closure sites, identified uses must be consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Record of Decision for anticipated future or end-point use. DOE's land use plans are tailored to local site conditions, address long-term stewardship and institutional controls, and involve stakeholders, including community reuse organizations. In addition, DOE complies with the National Environmental Policy Act (NEPA) when establishing land use plans.

DOE uses the OMB Circular A-11 and the Capital Programming Guide to implement a disciplined capital programming process that addresses project priorities between new real property assets and maintenance of existing assets. This process incorporates risk management and cost estimating to improve priorities and cost estimates, respectively. The process results in accurate and reliable estimates of Departmental capital investment priorities.

Estimates of DOE real property capital project investment needs are summarized in project data sheets for new construction projects to justify budget requests. Project information includes project description and scope, schedule of appropriation requests, cost estimate details, and the acquisition approach. Including this information in the Department's budget request ensures sound investment decisions.

Every year, the Department prepares an integrated facilities and infrastructure (IFI) crosscut budget to ensure adequate funds are identified for facility maintenance, repair and disposition. The IFI crosscut budget represents the resources required within the budget planning period to implement annual site plans as well as longer range plans like the TYSP. The IFI crosscut budget includes planned costs for capital asset projects, projects below the minor construction threshold or plant projects, maintenance and repair, deferred maintenance reduction, disposal, and demolition.

- **Acquisition** – The Department accomplishes the acquisition of a documented real property need by using one or more of several available acquisition methods (Figure 18). Regardless of the acquisition method selected, DOE evaluates alternatives, conducts benefit-cost analyses, and assesses lifecycle costs including disposition.

FIGURE 18 – DOE REAL PROPERTY ACQUISITION METHODS

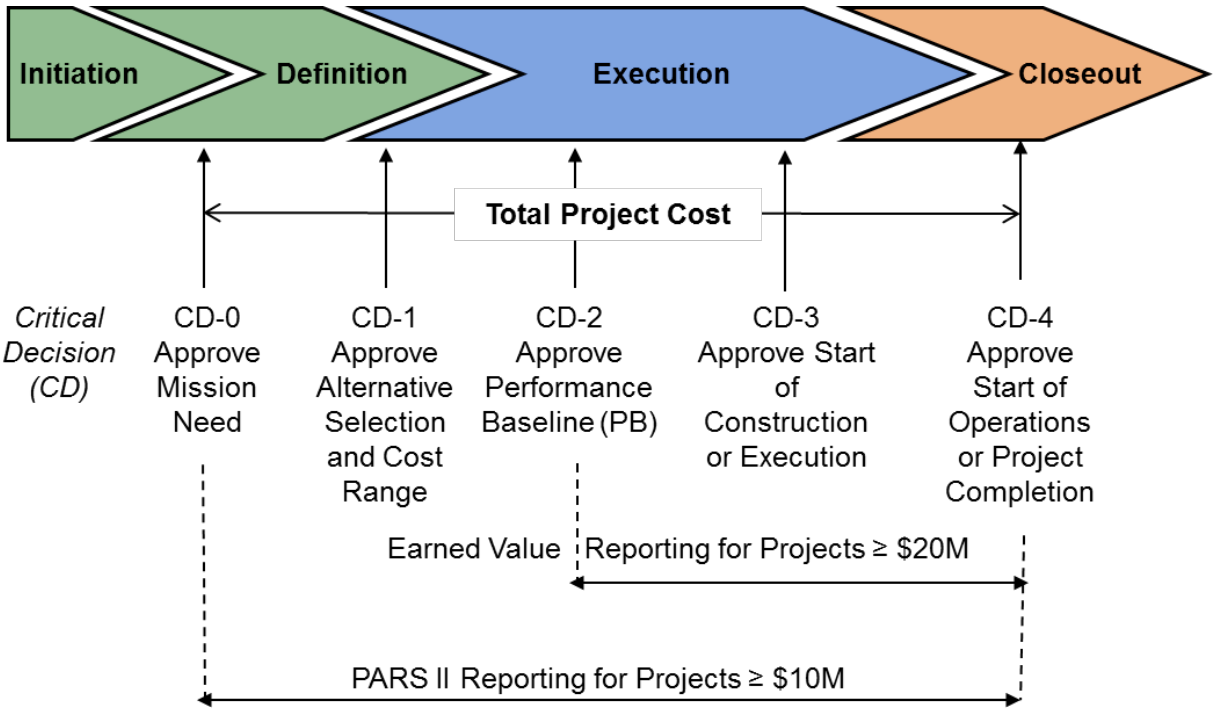
- Line Item Construction
- General Plant Projects (GPP)
- Institutional General Plant Projects (IGPP)
- Purchase of Existing Property
- Gift or Donation
- Conventional Leasing: Operating Lease or Capital Lease
- Transfer from Another Agency/GSA
- Permit from Another Agency
- Mission Repurpose of Existing Facility
- Exchange of Existing Property (GSA authority)
- Exchange for Services (GSA authority)
- Energy Savings Performance Contracts
- Third-Party Finance (Alternative Finance)
- Withdrawal of Public Domain Land

DOE distinguishes capital asset projects from minor construction projects based on cost thresholds. Capital asset projects include line-item construction projects, major items of equipment, and miscellaneous program-specific or general construction projects with a total project cost of more than $10 million. Minor construction or plant projects include new construction or mission repurpose of an existing facility with a total estimated cost of less than $10 million.

The Department has an established process for translating mission needs into reliable and sustainable facilities, systems, and assets that provide a required mission capability when accomplished through capital asset projects higher than $50 million[20]. The system is organized by phases and critical decisions (Figure 19) that progress from broadly-stated mission needs to well-defined requirements resulting in operationally effective, suitable, and affordable facilities, systems, and other products.

To improve real property acquisition and contract management, the Department structures contracts commensurate with risks. Firm-fixed price contracts are used to acquire services that are objectively defined in a statement of work and whose risks can be estimated with a degree of certainty.

FIGURE 19 – ACQUISITION MANAGEMENT SYSTEM FOR CAPITAL ASSET PROJECTS



Real property acquisition planning includes lifecycle cost considerations and business-case analyses of alternative solutions to satisfy the defined mission need. DOE Order 413.3B establishes the decision framework for acquisition management; roles and responsibilities for managers at all levels; and requirements for project documentation, project reviews, and reporting at each phase of the project, including the project initiation phase, project definition phase, and project execution phase leading up to project completion.

The Department has implemented several methods to measure and report the acquisition performance of real property assets including the use of earned value management, the industry standard for project control systems, as described in American National Standards Institute (ANSI/EIA-748) to track and report budget and schedule performance on all capital asset acquisition projects of $20 million or more.

20 In accordance with DOE Order 413.3B, the Deputy Secretary (on a case basis) may change the threshold to $20 million if project performance is not maintained with success targets.

- **Sustainment** – The Department's real property assets are maintained to promote operational safety, worker health, environmental protection and compliance, property preservation, and cost-effective management. Sustainment consists of maintenance and repair activities to keep the Department's real property inventory in working order including regularly scheduled maintenance and anticipated major repairs or replacement of components. Each year, DOE's target is to invest 2 to 4 percent of the replacement plant value of the active real property assets the Department owns in sustainment. Additional investment decisions are warranted to maintain an asset condition index of 0.95 and reduce deferred maintenance. Secretarial guidance for FY 2016 budget preparation requires all programs fund their infrastructure maintenance budgets at a level sufficient to at least avoid increasing the deferred maintenance backlog within the target submission level.

Strategic Petroleum Reserve. Developing underground storage areas for emergency petroleum supplies in Bayou Choctaw.

Each site administers a maintenance program to maintain real property assets in a condition suitable for its intended use. The maintenance program includes condition assessments of real property assets, a work control system, management of deferred maintenance, a method to prioritize maintenance projects, and cost accounting systems to budget and track maintenance expenditures.

Condition assessments are performed on all real property assets at least once during any five-year period using inspection methods in accordance with industry standards. Some mission-critical or safety related real property assets require a more frequent inspection cycle as determined by the Lead Secretarial Program Office/Cognizant Secretarial Office or the site/field manager.

The Department also conducts annual utilization surveys to determine the extent to which real property is being used. Survey results support sustainment investment and consolidation and disposal decisions.

Real property operations include the provision of utilities including electricity, gas, water, and sewer; the production of central steam, hot water, and chilled water; the collection and disposal of solid waste and recyclables; and services encompassing janitorial, grounds keeping, snow removal, communications, information technology, and security. Departmental operations reduce costs and improve operating efficiency by consolidating activities where practicable and eliminating excess facilities.

Elk at Rocky Flats. Elk have now returned to the Rocky Flats Site where cleanup was completed in 2005 after more than 50 years of nuclear weapons production.

DOE recapitalizes its real property assets to restore or extend the service life of its facilities. Recapitalization keeps existing facilities modern as standards and missions change. Recapitalization investments are complemented by an effective sustainment program to protect real property assets.

The Department's long-term stewardship of real property assets includes the physical controls, institutions, information, and other mechanisms to ensure protection of people and the environment where DOE has completed, or plans to complete, disposition. Long-term stewardship requirements are directly influenced by decisions made during the acquisition and sustainment phases of DOE's real property asset management.

DOE long-term stewardship of real property is established through disposition and long-term stewardship plans, cleanup at closure sites, and land use control action plans under a variety of programs including CERCLA, the Resource Conservancy and Recovery Act (RCRA), the Uranium Mill Tailings Radiation Control Act (UMTRCA), state voluntary cleanup programs, and the DOE Deactivation and Decommissioning (D&D) Program. Some DOE sites may prepare a site-wide NEPA document that addresses land use or resource management. For example, DOE prepared an environmental impact statement in 1999 to evaluate the potential environmental impacts associated with implementing a comprehensive land-use plan for the Hanford Site for at least the next 50 years.

- **DOE Disposition** – Consideration of an asset's disposition precedes real property acquisition and sustainment decisions. Planning for real property disposition is considered early in the lifecycle and in more detail when real property assets are no longer required for programs. Disposition of real property is accomplished through reuse and economic development or disposal. Other activities associated with preparing real property for disposition include stabilization, deactivation, decommissioning, and decontamination. The Department's real property portfolio includes a significant inventory of aging excess facilities, several of which are highly complex and heavily contaminated. The safe and secure disposition of these facilities requires stabilization (removal of nuclear materials, spent fuels, wastes, and classified documents and equipment); deactivation and decommissioning (shut down and removal of active systems); and demolition.

Oak Ridge Site. Demolition of the K-25 building.

DOE identifies unneeded real property assets excess to mission needs for reuse or disposal. If no other Federal agency accepts the real property asset for transfer, DOE determines the most efficient and effective method for conducting cleanup and disposition of the facilities and materials through reuse, demolition, or sale based on reducing risks and minimizing costs.

Occasionally, these unneeded assets offer capacity that can be shared with the public or other government agencies. The Department continually refines strategies and tools enabling it to share unique assets, including land, facilities, infrastructure, equipment, and technologies with the public. Real property planning, acquisition, sustainment, and disposal decisions are balanced to accomplish DOE's mission; reduce risks to workers, the public, and the environment; and minimize lifecycle costs.

DECISION-MAKING AND MANAGEMENT SUPPORT SYSTEMS

DOE real property decisions are based on lifecycle considerations that include requirements associated with acquisition, operation and sustainment, recapitalization, and disposition. Lifecycle analyses are conducted in accordance with OMB Circular A-94 and include consideration of alternatives to meet identified mission needs and requirements. DOE relies on mature and proven automated tools to assist in analyses and ensure accurate, reliable, and credible data to support informed decision-making. DOE has implemented institutional controls and the use of peer reviews to conduct data validation and verification.

The Department uses management and reporting systems to monitor, summarize, and report the status of real property management, including:

- **Facilities Information Management System (FIMS)** – The Department's corporate inventory system for tracking real property assets is a web-based system containing data on land, buildings, trailers and other structures and facilities owned or leased by DOE. FIMS supports the planning and budgeting process and Federal Real Property Profile (FRPP) reporting by providing accurate data on facility age, plant value, maintenance expenditure, condition, and utilization. Sites maintain their own data throughout the facility lifecycle and archive it for historical purposes following facility disposition.

- **Condition Assessment Information System (CAIS)** – DOE facility inspection and assessment data is loaded into CAIS, a web database where it is estimated using various RS Means Construction CostWorks data. CostWorks generates construction cost estimates and replacement plant values, and calculates sustainment costs. CAIS shares asset information with FIMS and provides FIMS annual deferred maintenance cost data. The CAIS cost information is updated annually and provides reliable and consistent field data to justify repair and replacement project requests.

- **Project Assessment and Reporting System (PARS II)** – The Department's system of record for capital asset project performance information is a web-based management tool that provides accurate and complete project status information to DOE senior managers and key program stakeholders. Project information, including project descriptions, budget information, major milestone dates, and monthly performance information, such as earned value management data, is entered in PARS II upon approval of mission need and continues until the project is completed.

- **Standard Accounting and Reporting System (STARS)** – The DOE financial system of record is a comprehensive financial management system that links budget formulation and execution, financial accounting and reporting, cost accounting, and performance measurement. The Department's financial reconciliation and reporting of real property assets is completed by comparing real property data contained in FIMS with corresponding financial data in STARS.

- **Active Facility Database Collection System (AFDCS)** – The Department's active facilities environmental liabilities are estimated using AFDCS, including the anticipated remediation costs for contaminated facilities still in use (active facilities) by DOE programs and retired contaminated facilities (excess facilities) waiting for disposal. Cost estimates for active and excess facilities are updated annually to reflect: the transfer of cleanup and management requirements for active facilities; changes in facility size or contamination assessments; and the estimated cleanup costs for newly contaminated facilities.

DOE sites maintain management systems tailored to the measuring and reporting of real property management. These systems support site management and reporting of real property assets and provide data to the Department's corporate management and reporting systems for consistency and alignment.

PERFORMANCE MEASUREMENT AND REPORTING

DOE established a performance measurement framework that includes management information systems to collect and report on facilities data and numerical indicators to reflect portfolio-wide facilities status.

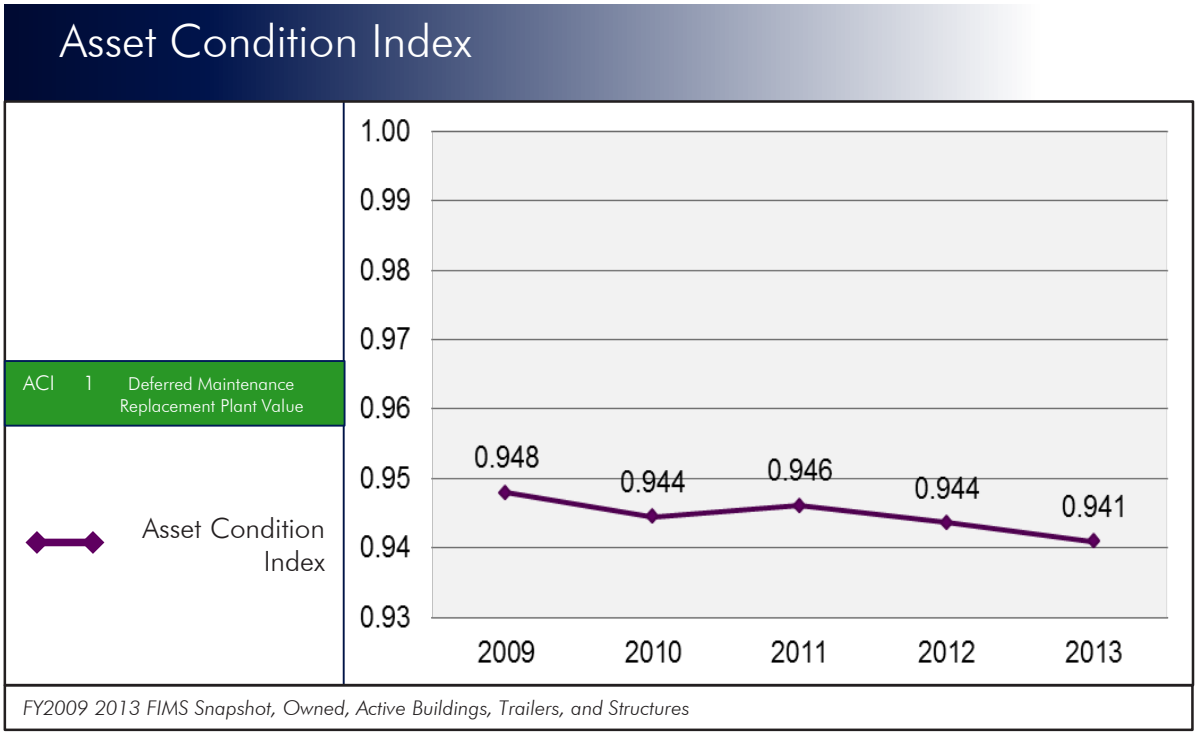
The Department established performance measures to periodically assess improvement initiatives and gauge the overall efficiency and effectiveness of its real property asset management. These measures were developed in accordance with the Federal Real Property Council guidance and are monitored for alignment and adjusted as appropriate. Updated targets for the measures are established annually through the Department's Three Year Rolling Timeline. Performance measures include operating costs, utilization, condition, and disposition. Additional measures are developed for the program and sites to gauge the effectiveness of site-level operations.

PERFORMANCE MEASURES AND TRENDS

The following performance measures are used by DOE to measure and report the performance of real property assets.

- **Condition –** The Department's real property conditions are measured using an asset condition index (ACI). The ACI reflects the outcomes of real property maintenance and recapitalization investments. The index is equal to one less than the ratio of deferred maintenance to the replacement plant value multiplied by 100. As ACI approaches 100, the facility's condition improves. Between 2009 and 2013, the Department's real property ACI was about 94 percent (Figure 20).

FIGURE 20 – REAL PROPERTY ASSET CONDITION INDEX



FY2009 2013 FIMS Snapshot, Owned, Active Buildings, Trailers, and Structures

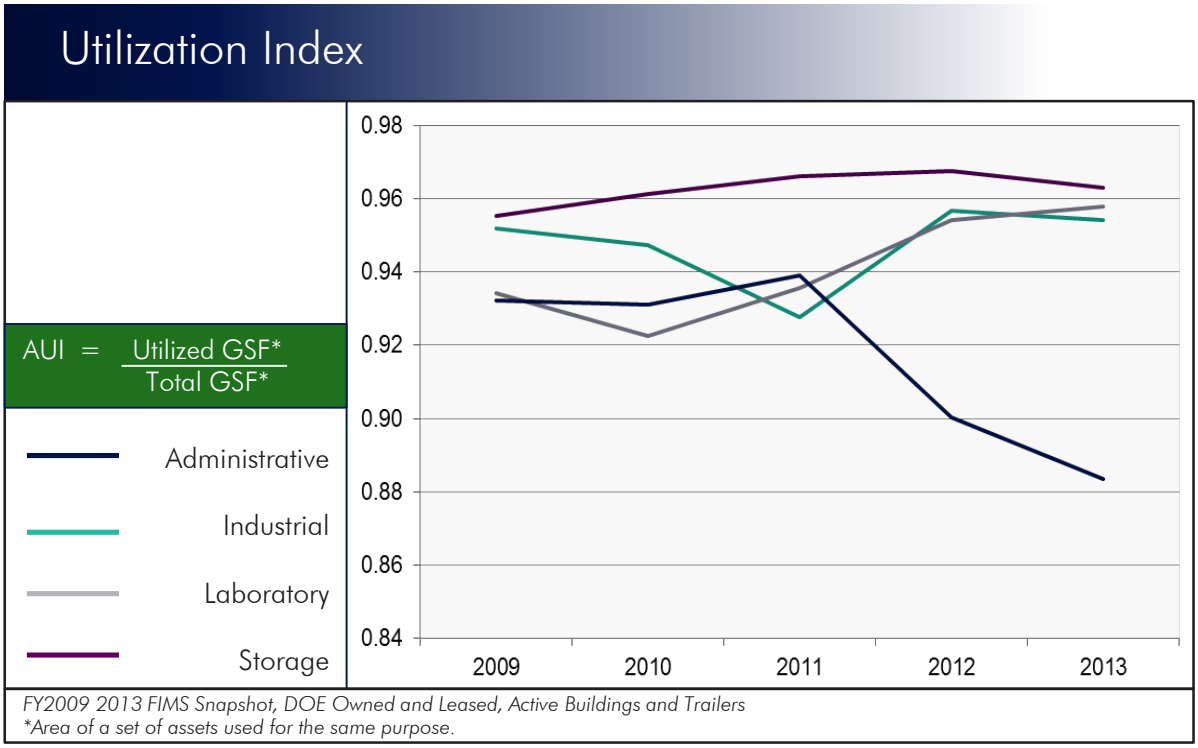
Due to the significance of DOE's aging infrastructure and its associated maintenance costs, the Department routinely monitors and reports deferred maintenance. Deferred maintenance is defined as "maintenance that was not performed when it should have been or was scheduled to be and which, therefore, is put off or delayed for a future period[21]." The values for deferred maintenance are derived from the periodic inspection of real property assets. Each asset is required to be inspected at least once every five years using inspection methods in accordance with industry standards. The resulting condition assessment yields the current condition of each asset, its estimated time to failure, optimal period to accomplish maintenance, and the estimated cost to correct identified deficiencies.

The Department also collects repair needs that provide the estimated cost to restore a real property asset's component system failures noted during a condition assessment survey to a state substantially equivalent to the most recently configured capacity, efficiency, or capability. Repair needs will always equal or exceed deferred maintenance. The difference between the two depends on each noted deficiency's optimum period and acceptability to management.

- **Utilization** – DOE real property utilization is measured using an asset utilization index (AUI). AUI reflects the percentage of real property assets utilized and is measured by dividing the building area in use by the total building area. The AUI is derived from FIMS data based on annual utilization surveys. AUI improves as excess facilities are eliminated and consolidations increase the space utilization of remaining facilities. Figure 21 depicts AUI over the past five years for DOE's four largest real property asset classes.

21 Statement of Federal Financial Accounting Standards No. 6.

FIGURE 21 – REAL PROPERTY ASSET UTILIZATION INDEX

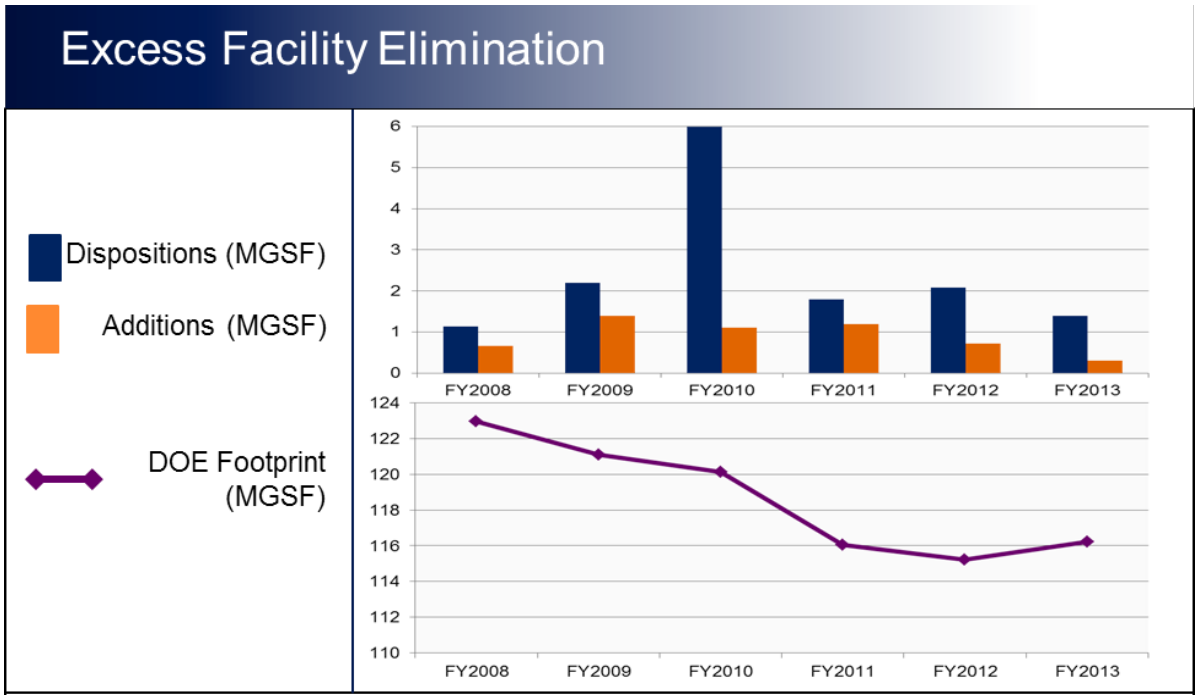


FY2009 2013 FIMS Snapshot, DOE Owned and Leased, Active Buildings and Trailers
**Area of a set of assets used for the same purpose.*

Between 2009 and 2013, DOE utilization of industrial and storage facilities and laboratories ranged between 92 and 96 percent. Utilization of administrative facilities declined from 93 percent to 88 percent. A focused effort to review and evaluate administrative facilities to increase utilization is under way.

- **Excess Elimination/Disposition** – DOE is required to offset the construction of new facilities by eliminating equivalent excess facilities. As part of its annual Congressional Budget Request each year, DOE demonstrates one-for-one offsets in the project data sheets for line-item construction projects. Each year, the Department reports the square footage of facilities constructed and facilities eliminated and disposed of by sale, lease termination or expiration, demolition, transfer for economic development, or other disposal methods. Figure 22 provides an excess facility elimination summary of the past five years.

FIGURE 22 – REAL PROPERTY EXCESS FACILITY ELIMINATION

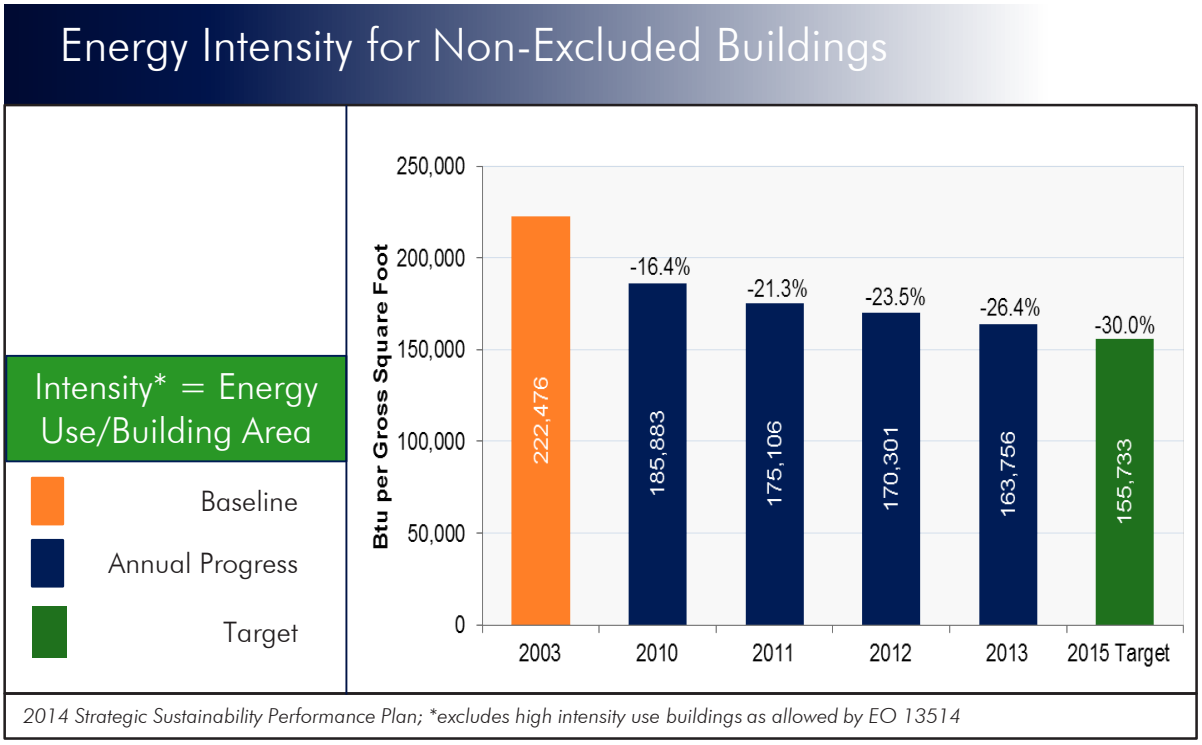


FY 2013 Report on Department of Energy's Disposition of Excess Real Property

Elimination of excess facilities is ongoing in all DOE programs, including offsetting new construction through the elimination of equivalent excess facilities. All new or replacement DOE construction is offset by disposition of excess facilities, equal to the amount of new square footage constructed. Between 2003 and 2013, DOE reduced its facility footprint by 12 percent from approximately 131 million gross square feet (MGSF) to 116 MGSF. Each year the Department has disposed of more excess facilities than it has added. Typical methods of disposition include demolition, lease termination or expiration, sale, and transfer for economic development. Despite budget constraints in past years, excess facility elimination and disposition remains a real property management priority.

- **Energy and Water Consumption** – Energy and water consumption represents a significant portion of DOE facility annual operating costs. Reducing energy and water consumption is a Departmental priority and is measured and reported using data collected at DOE sites via the Consolidated Energy Data Report. DOE must reduce its energy consumption by 30 percent by FY 2015 as compared to a FY 2003 baseline[22] in 3 percent annual reduction increments. Figure 23 depicts the FY 2003 baseline; Departmental progress to date for FY 2010 to FY 2013; and the FY 2015 target. The Department has demonstrated steady progress in reducing energy consumption.

FIGURE 23 – ENERGY INTENSITY

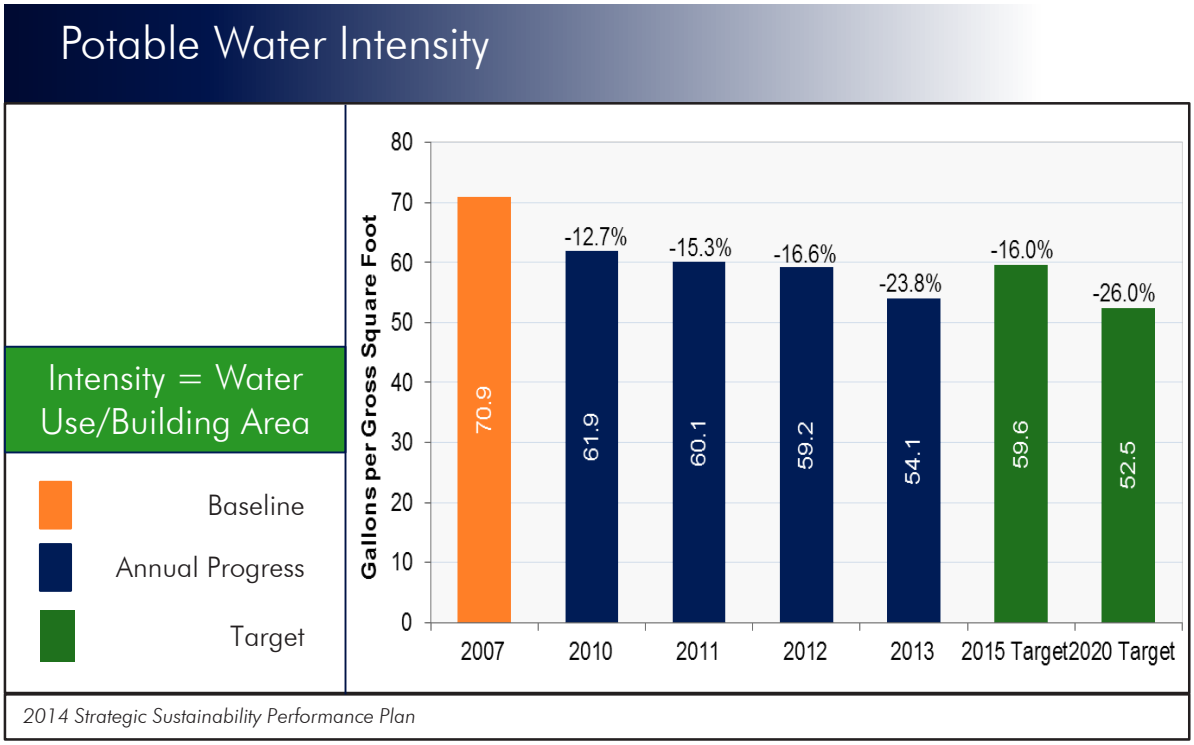


*2014 Strategic Sustainability Performance Plan; *excludes high intensity use buildings as allowed by EO 13514*

DOE is required to reduce potable water consumption by 2 percent annually through FY 2020 compared to a FY 2007 baseline; a 16 percent reduction is required by FY 2015 and a 26 percent reduction is required by FY 2020. Figure 24 depicts the FY 2007 baseline, DOE progress to date for FY 2010 to 2013, and the FY 2015 target and FY 2020 target. The Department exceeded the FY 2015 target reduction of 16 percent and is on pace to exceed the FY 2020 target reduction of 26 percent.

22 Energy Independence and Security Act of 2007.

FIGURE 24 – POTABLE WATER INTENSITY

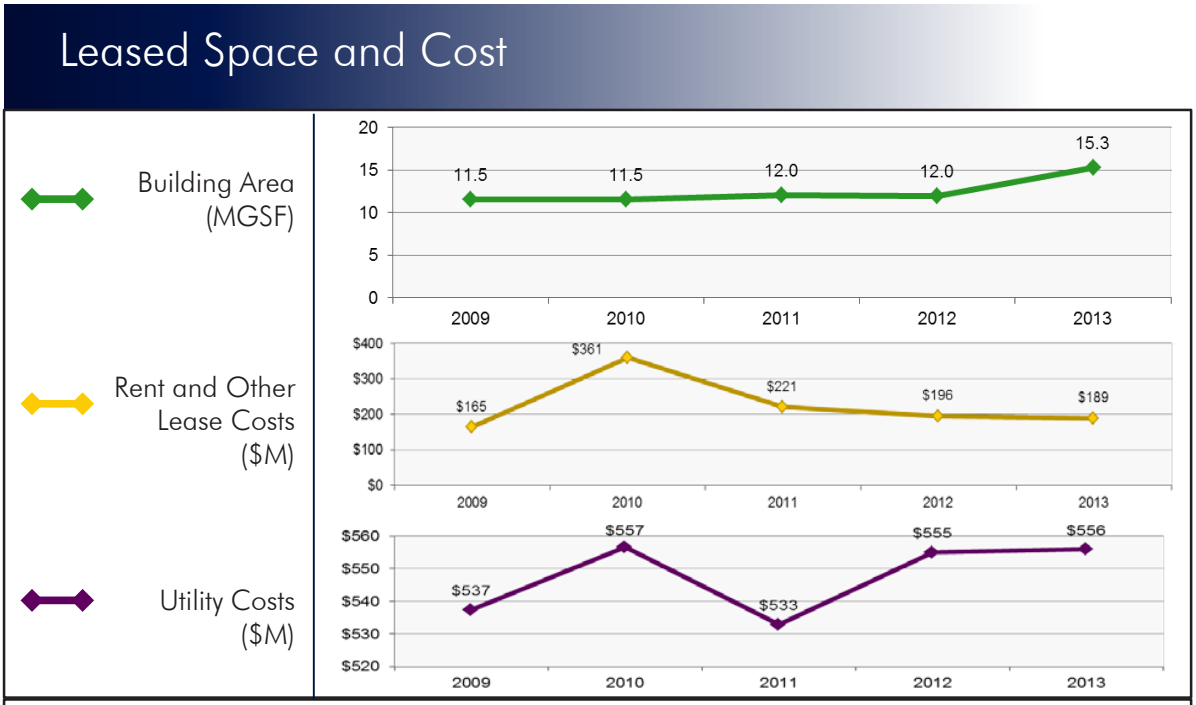


2014 Strategic Sustainability Performance Plan

DOE continues to implement key strategies, including electric metering, light-emitting diode upgrades, solar array and cool roof installation, steam trap replacement, and chiller plant and heating, ventilation, and air conditioning upgrades for energy conservation. DOE collects and monitors energy usage data of its facilities at the site level annually to track progress on energy reduction goals.

- **Lease Space and Costs** – Leased space currently represents over 15 million gross square feet of DOE's real property inventory and costs an estimated $190 million annually. Between 2009 and 2012, the DOE inventory of leased space remained steady at approximately 12 MGSF (Figure 25). The increase of roughly 3 MGSF in 2013 resulted from including the existing real property assets of the Bonneville Power Administration, FERC, the Kansas City Plant and Oak Ridge Office in FIMS.

FIGURE 25 – LEASED SPACE AND COST

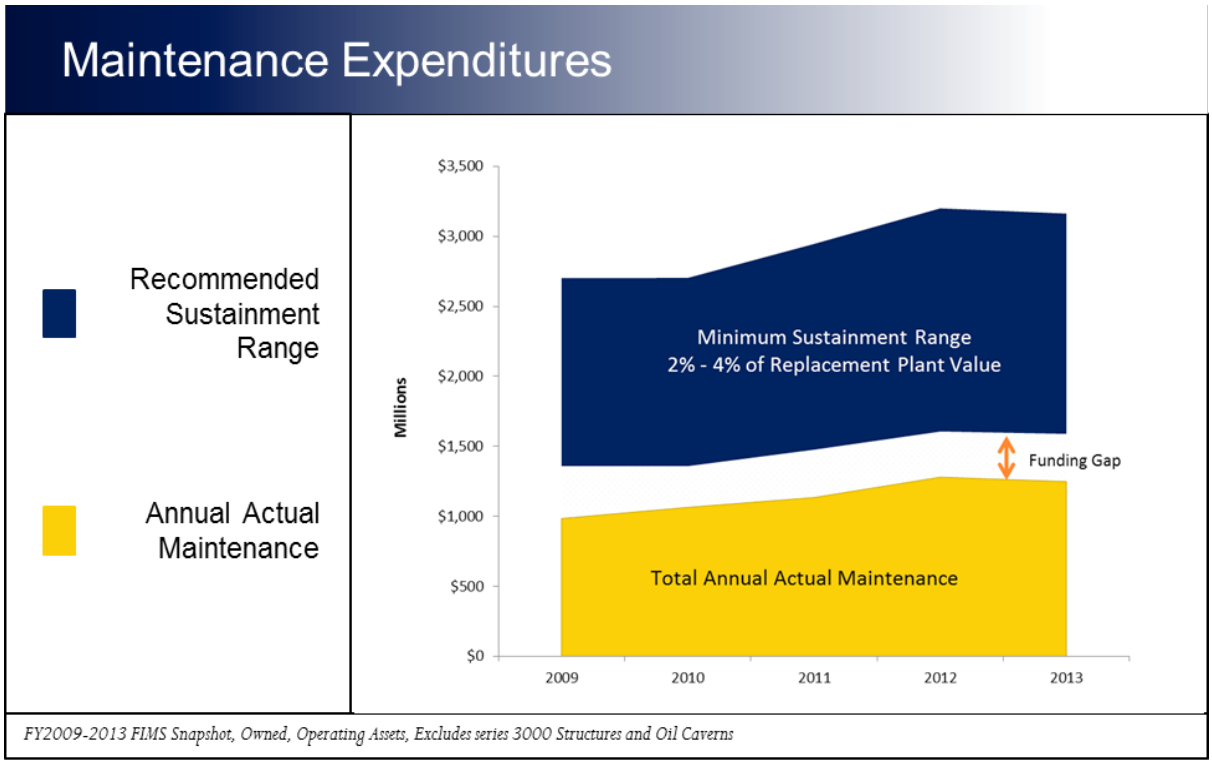


FY2009 2013 FIMS Snapshot: DOE Leased, Contractor Leased, GSA Owned, GSA Leased

DOE continues to target reduced leased space and costs as key components of real property management. DOE is committed to reducing the amount of real property acquired by leases and the associated lease costs. In accordance with the OMB's Freeze the Footprint and Reduce the Footprint initiatives, DOE is monitoring office and warehouse predominate-use space acquired by lease to reduce space acquired by lease and reduce associated lease costs.

- **Infrastructure Investments/Maintenance Expenditures** – DOE invests over $1 billion annually to maintain its real property assets. While this remains a significant investment, it is less than the recommended industry sustainment range of 2 to 4 percent of replacement plant value (Figure 26).

FIGURE 26 – MAINTENANCE EXPENDITURES

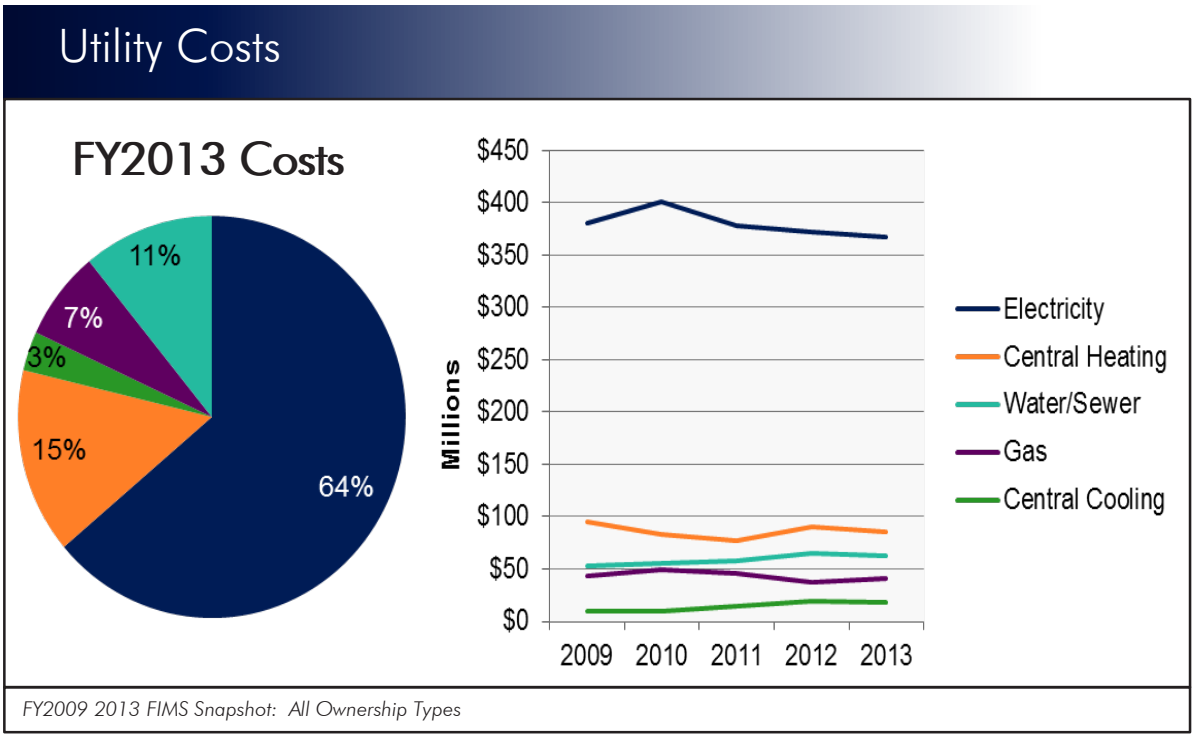


FY2009-2013 FIMS Snapshot, Owned, Operating Assets, Excludes series 3000 Structures and Oil Caverns

The Department continually seeks an appropriate balance of investments between new construction, sustainment, recapitalization, long-term stewardship, and disposal when making capital investment decisions.

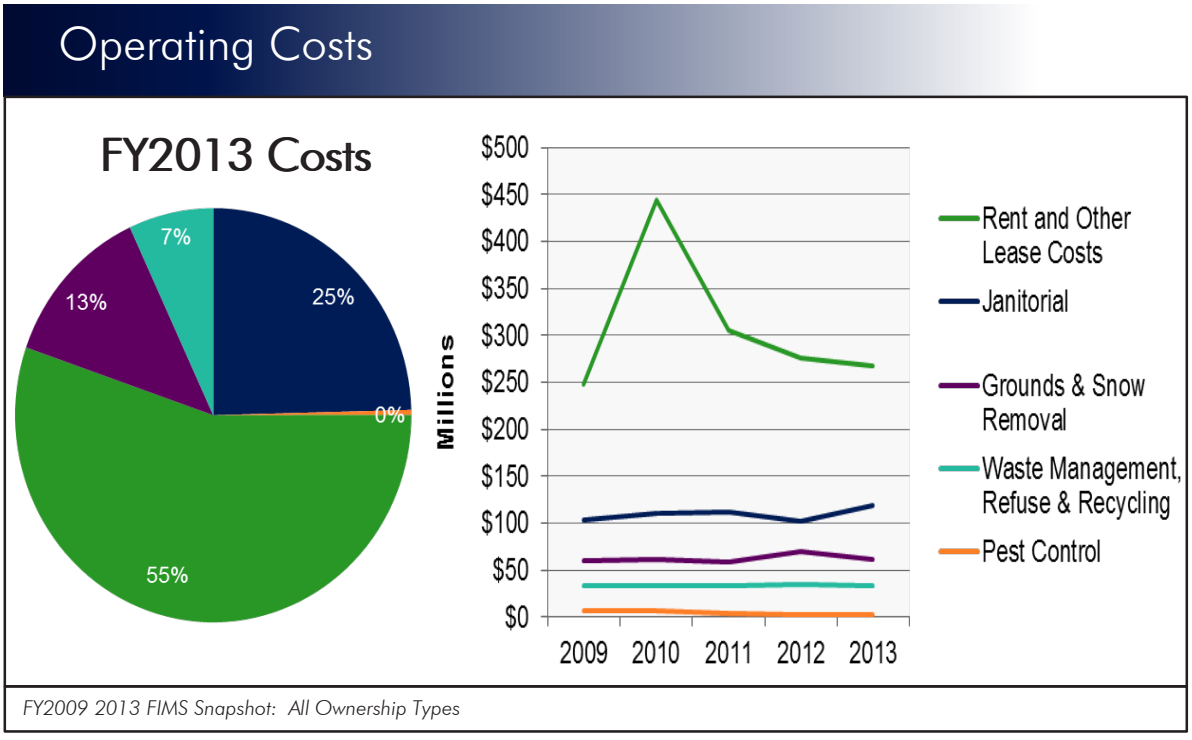
- **Operating Costs** – The Department monitors real property operating costs, including utilities (electricity, central heating, central cooling, water and sewer, and gas); janitorial services; roads and grounds maintenance; waste management, refuse and recycling; pest control; and rent and other lease costs. Between 2009 and 2013, DOE's utility costs (Figure 27) and other operating costs (Figure 28) remained relatively stable.

FIGURE 27 – UTILITY COSTS



FY2009 2013 FIMS Snapshot: All Ownership Types

FIGURE 28 – OPERATING COSTS



FY2009 2013 FIMS Snapshot: All Ownership Types

DOE collects, reports, and monitors real property utility and operating cost data in FIMS to identify trends and opportunities to improve efficiency and reduce costs.

DOE is currently developing additional measures to emphasize the following:

- **Mission Alignment** – Mission alignment is a new DOE initiative to improve the alignment of the Department's real property assets with Departmental strategic missions and core capabilities. DOE is creating new performance measures and indicators, such as asset functionality to measure the alignment between asset capabilities and assigned missions.

Each site is required to evaluate the relative importance and contributions of all real property assets to mission accomplishment. Mission-essential asset determinations will be based on program-assigned mission requirements and captured in FIMS.

Mission-unique facilities and the mission capabilities that facilities support are identified. Mission-unique facilities are one of a kind, physically unique, large scale, and technically complex, with long-lived operations critical to DOE and nation. These facilities are essential to the development of the innovative breakthrough technologies required for DOE to perform its core mission. They have operated to provide mission-essential, unique capabilities and are not easily reconfigurable for alternate use. Mission-unique facilities include accelerators (particle and light sources); high-performance computing; fission reactors (Advanced Test Reactor, High Flux Isotope Reactor); fusion research devices (National Spherical Torus Experiment); high-performance lasers (National Ignition Facility), and other large, unique production and waste processing facilities (MESAFab Fabrication Facilities, Defense Waste Processing Facility).

Mission-unique facilities are being identified for an enterprise-wide inventory of these facilities and their functionalities.

- **Personnel Qualifications** – To emphasize the importance of having certified professionals manage real property assets, DOE is implementing a professional development program similar to its acquisition career development and project management career development programs. The professional development program will be focused on the requisite personnel training, qualifications, and certifications for building operations, maintenance, energy management, and safety in accordance with the Federal Buildings Personnel Training Act. Performance measures will include the number of personnel attaining the appropriate certification.

- **Customer Satisfaction** – The Department plans to implement a customer satisfaction survey for real property end users to determine their level of satisfaction with the property management services being delivered. The intent is to ensure end users are satisfied in order to retain and attract additional facility users.

- **Internal Processes** – Internal processes are instrumental to real property planning and management, including establishing investment priorities, optimizing finite resource allocation, and improving decision-making with high-quality data. DOE is identifying appropriate measures to strengthen internal processes, including FIMS data validation scores and self-assessments of progress in key initiatives, such as Freeze the Footprint.

Improving property management performance is the real measure of success. The Department publishes an annual report on the state of facilities to support the DOE mission. Key elements of the report include summary statistics on the Department's real property inventory using data from the DOE's facility management system. DOE has also made significant progress to address concerns in the U.S. Government Accountability Office's high-risk category, "Managing Federal Real Property," including improving the accuracy and timeliness of data to support decision-making, strengthening real property utilization, and increasing disposition of unneeded and excess real property.

INDUSTRY STANDARDS AND BENCHMARKING

DOE relies on industry standards and benchmarks to improve the efficiency and effectiveness of its real property assets. Key elements of the report include summary statistics on the Department's real property inventory using data from the DOE's facility information management system. The Department also uses the National Academy of Sciences' sustainment benchmark of 2 percent to 4 percent of replacement plant value to guide annual sustainment investments. DOE implemented recapitalization models, including the NNSA Facilities and Infrastructure Recapitalization Program based on standards of the National Research Council. In addition, DOE uses information such as standards and reports from the following organizations to manage real property:

- **International Facility Management Association (IFMA)** – IFMA is the largest and most widely recognized international association for facility management professionals. Knowledge management specialties include operations and maintenance; project management; real estate and property management; and sustainability.

- **International Organization for Standardization (ISO)** – ISO is an independent, non-governmental organization that develops voluntary standards, including specifications for products, services, and systems, such as environmental management, energy management, risk management, and quality management.

- **American Society for Testing and Materials (ASTM) International** – ASTM International is the globally recognized leader in the development and delivery of international voluntary consensus standards, including property management standards for condition assessments, lifecycle costs, and disposal.

- **General Services Administration (GSA)** – GSA provides government-wide policies and guidance by collaborating with local, state, and Federal government agencies, industry, and professional organizations to identify and promote best practices and enable the sustainable and efficient use of assets.

The Department is currently developing a benchmark program for its real property to include the following:

- **ENERGY STAR Portfolio Manager** – Benchmarks for facility energy and water consumption and greenhouse gas emissions.

- **Facility Management Benchmarking** – Benchmarks that encompasses facility operating costs, including utilities, maintenance, and janitorial and space utilization.

- **IFMA Benchmarks Exchange** – Benchmarks covering facility management areas, such as operations and maintenance costs and space management.

- **APPA Facility Performance Indicators** – Benchmarks for facility management including inventory, utilization, and operating costs.

The Department draws on the Energy Facility Contractors Group (EFCOG) to identify and adopt best practices. EFCOG is a group of principal contractors at DOE facilities. The Department relies on EFCOG to promote the exchange of successful programs, practices, procedures, and lessons learned to improve the overall management of DOE sites.

PERSONNEL TRAINING AND QUALIFICATIONS

The Department has implemented several training and development programs to support the appropriate certification of DOE's acquisition, project management, real estate, and facility management workforce. These programs ensure DOE's real property is planned and managed by professionals with the requisite training, experience, and qualifications. The Department's real property management programs and certifications include:

- **Acquisition Career Management Program (ACMP)** – ACMP provides a formal, structured approach to career development for DOE's acquisition workforce to increase the proficiency of the acquisition workforce through competency-based training. ACMP provides acquisition employees the training, education, and experience needed to advance.

- **Project Management Career Development Program (PMCDP)** –PMCDP's well-defined career path includes certification, training, and continuous learning point requirements. It includes project responsibilities commensurate with clearly defined qualifications for contract specialists, contracting officers, purchasing agents, financial assistance specialists, property managers, and project directors and managers.

- **Certified Realty Specialists (CRS)** – Designation as a CRS requires professional real estate experience and specific training. The training program is based on requirements maintained by GSA for Lease Contracting Officers and Property Disposal Officers. Certification includes the following real estate specialty areas: acquisition, leasing, and land management and disposal. A CRS reviews and approves all real estate actions to acquire, manage and dispose of real property assets.

- **Real Estate Contracting Officers (RECO)** – Appointment as a RECO requires realty specialist certification, training, and experience. A RECO can be warranted in the same specialty areas as a CRS, and is authorized to execute contracts and agreements to acquire, manage and dispose of real property.

The Department is also implementing two new initiatives to further strengthen personnel training and development: a recognition program for facilities management excellence to recognize significant accomplishments in real property management and stewardship excellence; and establishing communities of practice for real and personal property to provide training and certification. The recognition program and communities of practice will improve property management communication and the dissemination of real and personal property information.

MANAGEMENT OF PERSONAL PROPERTY ASSETS

The effective acquisition, use, and disposal of personal property are critical to the execution of the DOE mission. DOE personal property management includes the development, implementation, and administration of policies, standards, programs, practices, and procedures for acquisition, receipt, storage, issue, use, maintenance, and disposal.

PERSONAL PROPERTY ASSETS

The Federal Regulations define personal property as all equipment, material, and supplies not classified as real property (41 CFR Chapter 102-36.40), Federal Government Records, special nuclear material, and atomic weapons (as defined by Section 11 of the Atomic Energy Act of 1954 (42 USC 2014) as amended). DOE accountable personal property is reportable government property managed, controlled, and maintained in the designated property management system of record from inception to final disposition or release from DOE inventory. The Department maintains several categories or classes of personal property (Figure 29) that warrant ES&H or security considerations. These DOE personal property categories are governed by applicable Federal statutes or regulations, or specific Departmental policy and orders.

FIGURE 29 – PERSONAL PROPERTY CATEGORIES

- Hazardous Property - Property, including scrap or waste, that is ignitable, explosive, corrosive, reactive, or toxic because of its quantity, concentration, or physical, chemical, or infectious characteristics, or that is deemed a hazardous material, chemical substance or mixture, or hazardous waste under the Hazardous Material Transportation Act, the Resource Conservation and Recovery Act, or the Toxic Substances Control Act.
- High-Risk Personal Property – Property that, because of its potential impact on public health and safety, the environment, national security interests, or proliferation concerns, must be controlled and disposed of in a non-routine manner.
- Munitions List Property – Property contained in the U.S. Munitions List, 22 CFR Part 121.
- Nuclear Suppliers Duel-Use List Property - Nuclear-related material, equipment, and related technology as described in the International Atomic Energy Agency Information Circular 254 Part 2.
- Nuclear Suppliers Group Trigger List Property - Nuclear material, equipment, and related technology as described in the International Atomic Energy Agency Information Circular 254 Part 1.
- Radioactive Property - Any item or material that is radioactive or radioactively contaminated and that emits ionizing radiation in excess of background radiation as measured by appropriate instrumentation.
- Sensitive Property - Property, regardless of value, that requires special control and accountability because of susceptibility to unusual rates of loss, theft, or misuse, or due to national security and export control considerations.

FEDERAL REQUIREMENTS

The Department's personal property management is governed by key Federal requirements:

- **Energy Policy Act of 1992/ 2005** – Establishes requirements for Federal fleets operating 20 or more vehicles in a metropolitan statistical area must acquire at least 75 percent of its light-duty vehicles as alternatively fueled vehicles.
- **Energy Independence and Security Act of 2007** – Focuses Federal agencies on the purchase of low greenhouse gas emitting passenger vehicles under the light and medium-duty classifications. Also requires

reduction of fleet petroleum consumption by 20 percent by 2015 from a 2005 baseline and increase of the use of alternative fuels by 10 percent annually.

- **Executive Order 13149, *Greening of the Government Through Federal Fleet and Transportation Efficiency*** – Implemented the Energy Policy Act of 1992 and set targets for reduced petroleum consumption and required agencies to increase average EPA fuel economy rating of passenger cars and light trucks.

- **Executive Order 13693, *Planning for Federal Sustainability in the Next Decade*** –Establishes requirements to reduce greenhouse gas emissions; sets sustainability goals for building energy use, agency water use, motor vehicle and fleet efficiency, and building performance; directs actions to promote sustainable acquisition and procurement, advance waste prevention and pollution prevention, and to implement performance contracts for Federal buildings.

National Renewable Energy Laboratory. A Ford hydrogen-powered internal combustion engine (H2ICE) bus at the National Wind Technology Center.

- **Code of Federal Regulations** – Establishes Federal requirements specific to personal property management such as: Federal Property Management Regulation 41 CFR Chapter 101 that prescribes regulations, policies, procedures, and delegations of authority pertaining to property management; Federal Management Regulation 41 CFR Part 102 its successor regulation that prescribes updated policies concerning property management and related administrative activities; DOE Property Management Regulation 41 CFR Part 109 which supplements the Federal Management Regulation through established personal property management policy and program objectives, and prescribes authorities and responsibilities for the conduct of an efficient personal property management program throughout the Department; 10 CFR Part 600 that establishes uniform financial assistance policies and procedures for the award and administration of DOE grants and cooperative agreements; and 48 CFR that establishes uniform policies and procedures for acquisition by all executive agencies and consists of the Federal Acquisition Regulation (FAR), the primary document, and agency acquisition regulations that implement or supplement the FAR.

- **DOE Regulation 48 CFR Part 945** – Addresses DOE specific acquisition policy related to government property, excluding property managed by management and operating contractors.

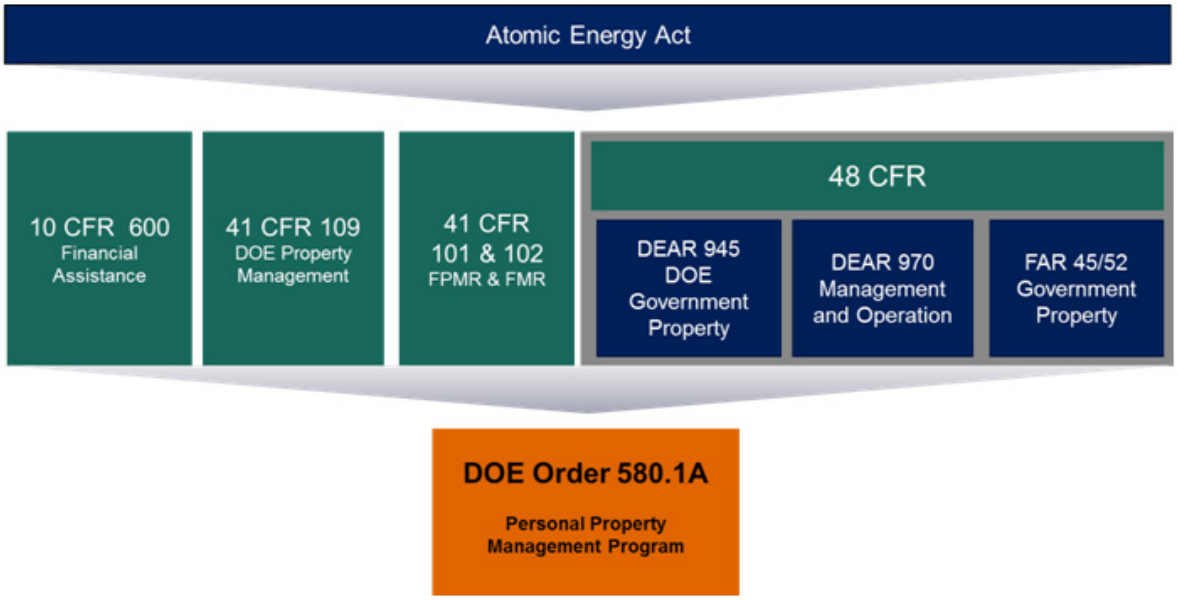
- **DOE Regulation 48 CFR Part 970** – Provides Departmental policies, procedures, provisions, and clauses that implement and supplement the FAR and other parts of the DOE Acquisition Regulation for the award and administration of the Department's management and operating contracts.

- **Federal Acquisition Regulation Part 45 and Part 52** – Establishes policies and procedures for providing government property to contractors; contractors' management and use of government property; and reporting, redistributing, and disposing of contractor inventory.

- **Federal Accounting Standards Advisory Board** – Establishes Federal financial accounting standards through the development of Statement of Federal Financial Accounting Standards. These standards are the authoritative guidance and define the accounting treatment for each category of personal property.

These requirements are critical to managing Federal personal property and incorporated in DOE Order 580.1A, *Personal Property Management Program* (Figure 30) and associated guides.

FIGURE 30 – KEY PERSONAL PROPERTY FEDERAL REQUIREMENTS AND DRIVERS



DEPARTMENTAL MANAGEMENT DIRECTIVES

The Department's primary directive for personal property management is DOE Order 580.1A Chg. 1, *Department of Energy Personal Property Management Program*. Developed to ensure compliance with public laws and Federal regulations, DOE Order 580.1A establishes internal policy, requirements, and responsibilities for personal property management and accountability. The implementation of DOE Order 580.1A is supported by DOE Guide 580.1-1, Department of Energy Personal Property Management Guide: An Implementation Guide for the DOE Personal Property Management Program.

Management of office and data center electronics, such as computers, displays, servers, cell phones and printers, is also critical to achieving the DOE mission and is regulated by a wide variety of statutes, Executive Orders, and guidance. These electronics are a unique set of personal property, in that they have Federal requirements that apply to the entire lifecycle of the product – from purchasing, through use, and final disposition.

The Department reports compliance with Federal requirements across the lifecycle, through annual reporting in the OMB sustainability and energy scorecards. The scorecard is used to assign a colored score that is publically published for the Department. The Department has generally been called out as an exemplary agency in these scorecards and in Government Accountability Office reports on electronics management.

ASSET MANAGEMENT GOALS AND ASSOCIATED PERSONAL PROPERTY OBJECTIVES

The Department established a series of personal property objectives to attain the four asset management goals (Figure 31).

FIGURE 31 – ASSET MANAGEMENT GOALS AND SUPPORTING PERSONAL PROPERTY OBJECTIVES

GOAL 1 PROPERTY ALIGNMENT – IMPROVE ALIGNMENT OF THE PROPERTY ASSET PORTFOLIO TO MEET CURRENT AND FUTURE MISSIONS.

- Improve personal property identification and accountability.
- Improve personal property utilization and disposal.

GOAL 2 PORTFOLIO MANAGEMENT – MAINTAIN THE PORTFOLIO OF PROPERTY ASSETS IN A CONDITION TO SUPPORT MISSION REQUIREMENTS AND PROVIDE A QUALITY WORKPLACE.

- Improve personal property management systems.
- Implement process changes to improve efficiency.

GOAL 3 PERFORMANCE MANAGEMENT – PLAN AND MANAGE THE PORTFOLIO OF PROPERTY ASSETS IN A SUSTAINABLE AND COST-EFFECTIVE MANNER.

- Improve personal property accounting and control for equipment and high risk sensitive property.
- Improve fleet management, including the reduction of fuel consumption.
- Improve personal property cost control and reporting.

GOAL 4 PROPERTY ORGANIZATION – ENSURE STAFF MEMBERS HAVE THE PROPER TRAINING AND ACCESS TO PROPERTY MANAGEMENT RESOURCES.

- Enhance the personal property management training and certification program.
- Increase organizational development opportunities for personal property professionals.Improve communications

LIFECYCLE ASSET MANAGEMENT

The Department operates its personal property management lifecycle (Figure 32) in a decentralized manner due to the location of its facilities. Despite the decentralized approach to personal property management, the lifecycle includes planning and budgeting, acquisition, sustainment, and disposition.

FIGURE 32 – PERSONAL PROPERTY LIFECYCLE ASSET MANAGEMENT

- **Planning and Budgeting** – The majority of planning and budgeting for personal property is done within programs and at individual sites. The exception is the planning and budgeting of motor vehicles, which is conducted at the Program Offices and DOE headquarters. DOE programs define the specific need for personal property to carry out respective missions.

- **Acquisition** – Subsequent to the identification of personal property needs, excess property is screened internally as the first source of supply. If property is not available through internal sources, it is purchased in accordance with the DOE Acquisition Regulation. The Department receives, inspects, and identifies property upon receipt and establishes property records in site property information management systems. These systems support the reporting of personal property through the Department's Property Information Database System (PIDS).

- **Sustainment** – After the property is received, and depending on the type of property, it is either issued for use or maintained in a system of record until issued. Management walk-throughs are conducted at least once every two years to identify idle and excess personal property. DOE programs are responsible for ensuring property is used effectively.

  The Department provides adequate accessible storage facilities and warehouse services for the receipt, storage, identification, issue, and protection of DOE property. Stored property receives the appropriate climate control and physical protection from loss, theft, and damage, as required. Access to storage areas is restricted to authorized personnel. High-risk, sensitive, and hazardous property is stored in accordance with security, environmental, safety, and health instructions. Stock records with authorized recipient information are maintained in centralized stockrooms and property is only issued upon receipt of an authorized request.

  Internal controls and records are established to maintain personal property accountability and control and to minimize fraud, waste, and abuse. Accountability for government furnished equipment is established through grants, work authorizations and contracts, and financial assistance mechanisms. Assets designated for temporary use are assigned to tool cribs and equipment pools to maintain accountability and control. Analyses are performed using purchase and usage information. Review of loss, theft, damage or destruction and disposal reports are reviewed and adjudicated to ensure no systemic deficiencies. Physical controls protect property and prevent loss, theft, or unauthorized removal. These controls may include a property pass system, memoranda records, employee check-out procedures, perimeter fencing, and security gate checks.

  The Department maintains its personal property assets through proper maintenance and environmental controls to prevent failure or damage. DOE organizations and contractors ensure that personal property subject to periodic calibration or preventative maintenance is maintained in accordance with manufacturer or standards of organizations such as the National Institute of Standards and Technology, and specified calibration or preventative maintenance schedules. Calibration and maintenance schedules are established to ensure that assets are in working order to provide optimum performance.

- **Disposition** – The DOE personal property disposal process includes reuse, transfer, donation, sale, abandonment, destruction, or other disposal methods. Unneeded personal property over $10,000 in acquisition value is screened for reuse through the Department's Energy Asset Disposal System to maximize asset use. DOE organizations use unneeded personal property as the first source of supply instead of a new procurement to satisfy mission requirements. Precious metals, high-risk, classified, and sensitive property are reviewed in accordance with applicable Federal regulations and Department orders and guidance prior to disposal.

The Department conducts management-assist visits to evaluate activities throughout the personal property management lifecycle. The visits develop awareness of systemic process weaknesses, gaps, and vulnerabilities, and they result in recommended actions to address deficiencies.

DECISION-MAKING AND MANAGEMENT SUPPORT SYSTEMS

Decisions related to personal property management are decentralized and delegated to the Programs and appointed Organizational Property Management Officers. Decisions are based on lifecycle considerations involving acquisition, operations, utilization, maintenance, obsolescence, and disposal. DOE programs evaluate disposal options when

personal property can no longer be maintained, is beyond economical repair, or is obsolete. When personal property becomes obsolete, programs ensure that replacement property and spare parts are acquired to sustain mission continuity. Utilization is monitored at the site level through the property management systems. Accountable property no longer needed is declared excess and may be screened for reuse throughout the Department, and ultimately the Federal government. Property not claimed is processed for disposal.

DOE uses several systems and tools for management of its personal property (Figure 33).

FIGURE 33 – PERSONAL PROPERTY MANAGEMENT SYSTEMS

- Property Information Database System (PIDS) – PIDS is an inventory system of personal property records and includes information used by DOE to support annual reporting requirements.
- Energy Asset Disposal System (EADS) – Personal property personnel at the Department and site level use EADS to perform internal screening of excess personal property for reuse before it is released into the Federal disposal process.
- Personal Property Reporting Tool (PPRT) – The Department uses the GSA's PPRT to submit its annual exchange/sale report and non-Federal recipients report in accordance with 41 CFR Chapter 102-36 (40 U.S.C. 503) and 41 CFR Chapter 102-39 (40 U.S.C. 529) respectively.
- Federal Automotive Statistical Tool (FAST) – DOE uses FAST as a centralized system to report motor vehicle data with respect to fleet inventory and costs incurred for the operation, maintenance, acquisition, and disposition of motor vehicles in accordance with OMB Circular Number A-11 reporting requirements.
- Federal Fleet Management System (FedFMS) – The Department uses FedFMS to manage its motor vehicle fleet inventory, maintenance and expenses and analyze large volumes of data to support annual OMB data calls and FAST reporting requirements. DOE tracks and controls its utilization and maintenance and fuel costs in FedFMS to manage Department resources for maximum effectiveness and efficiency.
- Federal Motor Vehicle Registration System (FMVRS) – The Department uses FMVRS to record all vehicle Original Equipment Manufacturer data, status updates, and official U.S. government license plates assigned to DOE-owned and commercially-leased government motor vehicles. This system enables the Department and GSA to maintain a complete inventory of all U.S. government license plates manufactured, including those held by the Department for future use. This system provides federal, state, and local law enforcement officials with access to help determine if a government vehicle is authentic.

Individual DOE sites maintain management systems tailored to the measuring and reporting of personal property management.

PERFORMANCE MEASUREMENT AND REPORTING

The Department uses a balanced scorecard system to measure and report Federal and contractor personal property management. The system provides consistent techniques useful in performing contractor oversight functions. Performance measures are used to evaluate management effectiveness and property operations. Examples of management measures include adequacy of policies and procedures; appropriate placement of the property management function within the organization; staffing and grade levels; employee turnover; career development and training; and adequacy of management controls. Property operations performance measures include inventory completion targets; property records accuracy targets; property utilization targets; excess property disposal targets; and reports of survey completion targets.

This system ensures management approaches adhere to the Department's mission, vision and goals, follow recognized best business management practices, and comply with applicable statues, regulations, and contract terms and conditions. DOE routinely conducts internal self-assessments to implement business system process improvements.

PERFORMANCE MEASURES AND TRENDS

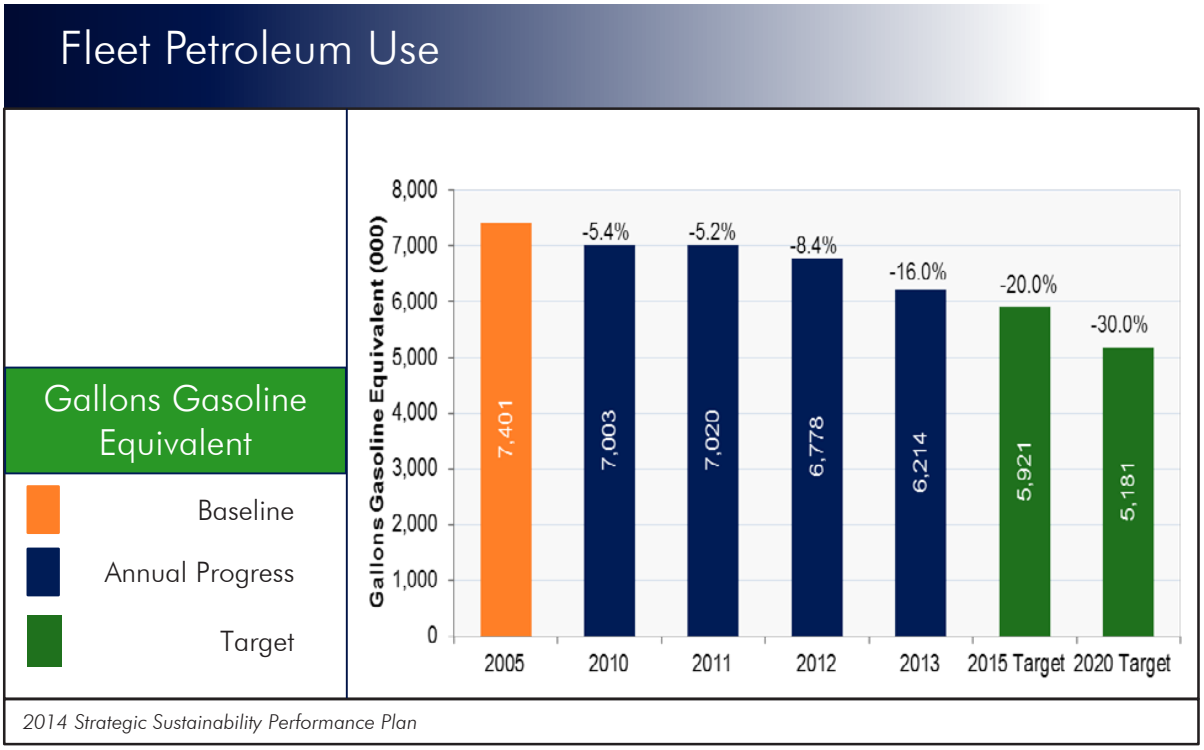
The Federal personal property balanced scorecard is a key component of the Department's business systems performance measurement and management program. The Federal personal property scorecard includes developing performance measures, establishing targets, and taking measurements. The Department uses inventory, utilization, and disposal measures to track and report personal property performance. Formal, documented self-assessments are the principal sources of data generation. The Department annually verifies site compliance using scorecard evaluations.

- **Inventory** – DOE measures the results of accountable personal property, including sensitive property, high-risk personal property, and precious metals by completing a physical inventory. Inventory accuracy rates are established at 98 percent for accountable personal property and 100 percent for sensitive and high-risk personal property. High-risk personal property is recorded in the property database within 15 days of receipt and includes designed or prepared property, export controlled property, hazardous property, radioactive property, nuclear weapon components or weapon-like components.
- **Utilization** – DOE personal property utilization is measured by the effective internal use and redeployment of property (non-motor vehicles). During the acquisition process, all excess accountable property is screened throughout the Department as the first source of supply.
- **Disposal** – The Department uses two primary measures to monitor and improve personal property disposal: property disposal effectiveness and sale of surplus property. The effectiveness of property disposal is measured by the volume or acquisition cost of excess personal property made available or transferred to another entity. The sale of surplus personal property is measured by percentage of property sold within 60 days after it is offered for sale.

DOE distinguishes fleet management from other types of personal property management. As a result, fleet management performance measures such as motor vehicle inventories and fuel consumption are monitored and reported separately.

Fleet Petroleum Use – DOE is required to reduce fleet petroleum use by 20 percent in FY 2015 as compared to a FY 2005 baseline[23]. DOE is expected to achieve a 2 percent annual reduction totaling 20 percent by FY 2015 and 30 percent by FY 2020. Figure 34 depicts the FY 2005 baseline; Departmental progress to date for FY 2010 to FY 2013; and the FY 2015 and FY 2020 targets. While the Department has realized steady progress in reducing its fleet petroleum use, continued emphasis is required to meet performance expectations.

FIGURE 34 – FLEET PETROLEUM USE



23 Energy Independence and Security Act of 2007.

INDUSTRY STANDARDS AND BENCHMARKING

The Department is committed to continuous performance improvement in the management of its personal property assets. Improvement is being realized by identifying and adopting best industry practices, using applicable benchmarks to measure performance, and documenting and communicating lessons learned. DOE is implementing best practices, benchmarking, and lessons learned by actively participating in the Property Management Executive Council (PMEC) and Interagency Committee on Property Management (ICPM).

- PMEC is comprised of representatives of several executive agencies and industry partners that collaborate to document personal property best practices throughout the property management lifecycle. The objective of these efforts is to reduce the cost of managing government personal property and to increase accountability through the use of trained professionals, commercial standards, and innovative technologies.

- ICPM is comprised of representatives from various executive agencies that work to standardize efficient and effective Federal property management policies, procedures and automated systems; identify, publicize, and promote personal property management changes on a government-wide basis; and advance property stewardship through meaningful performance measurement and enhanced customer service.

PERSONNEL TRAINING AND QUALIFICATIONS

Improving the personal property management performance also requires appropriately trained and qualified personnel. To ensure appropriately trained and certified personnel with the necessary experience, the Department has implemented a Personal Property Management Career Development Program (PPMCDP). DOE uses PPMCDP as a mandated certification program to attract, train, and retain personal property management professionals. DOE requires personal property management professionals to possess the requisite certification for their assigned position and complete 80 hours of continuous learning and continuous education credits every two years. Credits are obtained by attending training and certification provided through DOE, Federal organizations including the Federal Acquisition Institute and Defense Acquisition University, as well as external organizations who offer approved courses. Appointments as an Organization Property Management Officer, Property Administrator, and Organizational Motor Equipment Fleet Manager require the appropriate personal property management training and certification.

THE WAY FORWARD

While technology and human capital were some of the principal asset management challenges of the 20th century, DOE foresees sustainment, sustainability, aging facilities and infrastructure, and data management and integrity as key real and personal property challenges of the early 21st century. To affirm DOE's commitment and leadership in developing and maintaining real and personal property, those responsible for the Department's management of property will commit to:

- providing adequate critical investments to sustain and revitalize aging infrastructure;
- achieving sustainability goals;
- improving the accuracy and reliability of cost projections;
- forecasting the impact of different levels of investment;
- prioritizing budgets based on current and emerging mission needs;
- repurposing or expediting disposal of unneeded assets;
- improving data quality to support decisions;
- implementing generally accepted industry best practices and benchmarking; and
- growing and investing in human capital.

Maintenance of real and personal property assets alone will not suffice. An integrated approach that balances capital investment, elimination of excess facilities, and sustainment for an aging infrastructure and facilities inventory in a constrained funding environment is needed. While focus on careful planning for acquisition of assets continues, DOE property management will also review the operations, maintenance, and eventual disposition of assets.

The Department will continue to conduct assessments to align assets with missions while gaining insight into their condition, functionality, utilization, and capabilities to make capital investment decisions and increase the visibility of its capabilities.

DOE will remain an active participant in property management advising bodies, Federal councils and committees, and professional associations to leverage knowledge and adopt best practices to reduce lifecycle costs and achieve measurable and sustainable real and personal property performance improvement.

Appendix A – Acronyms

ACI	Asset Condition Index
ACMP	Acquisition Career Management Program
AEA	Atomic Energy Act
AFDCS	Active Facilities Database Collection System
ANSI/EIA	American National Standards Institute/Electronic Industries Alliance
ARI	Asset Revitalization Initiative
ASTM	American Society for Testing and Materials
AUI	Asset Utilization Index
CAIS	Condition Assessment Inventory System
CD	Critical Decision
CEDR	Consolidate Energy Data Report
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CRS	Certified Realty Specialist
DEAR	Department of Energy Acquisition Regulation
D&D	Deactivation and Decommissioning
DM	Deferred Maintenance
DOE	Department of Energy
EA	Office of Enterprise Assessments
EADS	Energy Asset Disposal System
EERE	Office of Energy Efficiency and Renewable Energy
EFCOG	Energy Facilities Contractor Organization Group
EM	Office of Environmental Management
EO	Executive Order
ERDA	Energy Research and Development Agency
ES&H	Environment Safety and Health
ESB	Energy Sciences Building
ESPC	Energy Savings Performance Contract
EVMS	Earned Value Management System
FAR	Federal Acquisition Regulation
FAST	Federal Automotive Statistical Tool
FE	Office of Fossil Energy
FedFMS	Federal Fleet Management System
FERC	Federal Energy Regulatory Commission
FIMS	Facility Inventory Management System
FMVRS	Federal Motor Vehicle Registration System
FRPC	Federal Real Property Council
FRPP	Federal Real Property Profile
FY	Fiscal Year
GAO	Government Accountability Office
GeV	Gigaelectronvolt, a unit of energy equal to billion electron volts
GPP	General Plant Project
GSA	General Services Administration
GSF	Gross Square Feet
HPSB	High Performance Sustainable Building
ICPM	Interagency Committee on Property Management
IFMA	International Facility Management Association
IFI	Integrated Facilities and Infrastructure
IGPP	Institutional General Plant Project
ISO	International Organization for Standardization
LEED®	Leadership in Energy and Environmental Design
LM	Office of Legacy Management
M&O	Management and Operating
MGSF	Million Gross Square Feet
NE	Office of Nuclear Energy
NECPA	National Energy Conservation Policy Act
NEPA	National Environmental Policy Act
NNSA	National Nuclear Security Administration
NREL	National Renewable Energy Laboratory

OAPM	Office of Acquisition and Project Management
OMB	Office of Management and Budget
PARS II	Project Assessment and Reporting System
PIDS	Property Information Database System
PMA	Power Marketing Administration
PMCDP	Project Management Career Development Program
PMEC	Property Management Executive Council
PP	Personal Property
PPMCDP	Personal Property Management Career Development Program
PPRT	Personal Property Reporting Tool
RECO	Real Estate Contracting Officer
RCRA	Resource Conservancy and Recovery Act
RP	Real Property
SC	Office of Science
SSP	Site Sustainability Plan
SSPP	Strategic Sustainability Performance Plan
STARS	Standard Accounting and Reporting System
TYSP	Ten Year Site Plan
UMTRCA	Uranium Mill Tailings Radiation Control Act
U.S.	United States
U.S.C.	United States Code

Acknowledgment List

The following individuals deserve special thanks for their contributions to the development of the U. S. Department of Energy Asset Management Plan.

Helene Abbott
Carrie Abravanel
Helen Ackles
Michael Adams
Bruce Akers
Jeanette Alderete
Bonnie Anderson
Peter Baco
Ernest Baier
Sonya Baskerville
Tom Beck
Loida Begley
Cate Berard
Gary Brown
Jim Bullian
Bill Buyers
Drew Campbell
Pete Cartwright
Chris Clayton
Greg Collette
Mike Coogan
Brian Costner
Cheri Cross
Phil Dalby
Chris Davis
James Devere
Ashley Doleman
Lynwood Dukes
Mike Dunn
Paul Estabrooks
Fred Fanning
Terry Fehner
Shanique Francois
LaVerne Fuller
Albes Gaona
Jay Glascock
Ivan Graff
Michael Greene
Robert Haldeman
Larry Hardison
Nathan Harvey
Doug Hooker
Cindy Hunt
Kim Jackson
Laura Kilpatrick
Peter Klemkowsky
Ken Lewis
Mike Love
Carmelo Melendez
Dave Michlewicz
BJ Morris
Soudeh Motamedi
Peter O'Konski
Colleen Ostrowski
Linda Ott
Heidi Palombo
Lisa Peteet
Kim Petry
Sujita Pierpoint
Peggy Plyler
Richard Provencher
Adam Pugh
Tom Robinson
Ruben Sanchez
Berta Schreiber
Jessica Schwersenska
Mike Shincovich
Dan Shirley
Stephanie Short
Josh Silverman
Tania Smith
Michael Somerville
John Stann
David Steinau
Emily Stoddart
Tara Stokes
Andrew Szilagyi
Dante Tan
Jefferson Underwood
Monja Vadnais
Raam Vichare
Ann Walls
Tyrone Ware
Scott Whiteford
Meredith Williams
John Yates

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