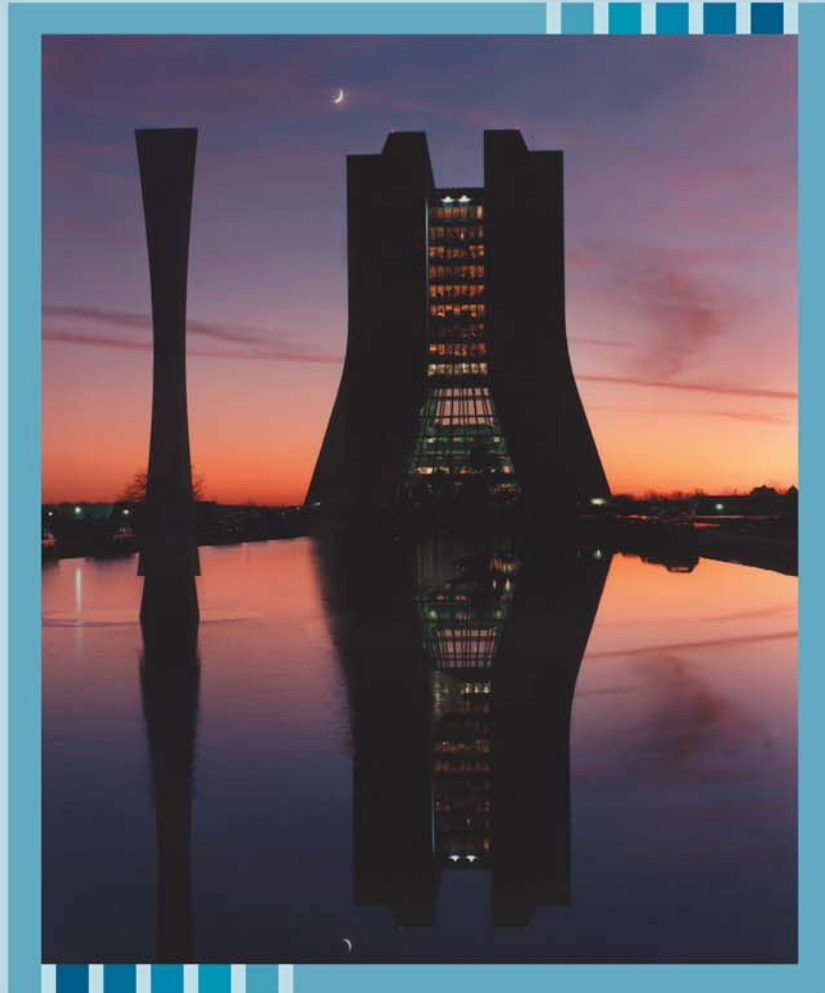


REAL PROPERTY ASSET MANAGEMENT PLAN



U.S. DEPARTMENT OF ENERGY
AUGUST 2005

Editors Notes:

This Real Property Asset Management Plan covers the Department of Energy including the National Nuclear Security Administration, the Energy Information Administration, and the Power Marketing Administrations. As an independent regulatory agency, the Federal Energy Regulatory Commission (FERC) prepares separate documents.

This document is also available on the Department of Energy's web site: <http://www.energy.gov>.

This plan was produced by the Office of Engineering and Construction Management in the Office of Management, Budget and Evaluation. The point of contact for this document is Eduard A. Dailide, P.E. who can be reached at (202) 586-5422 or by e-mail to ed.dailide@hq.doe.gov.

Cover Photo: Night, in the form of a crescent moon, overtakes the fading light of day beyond Wilson Hall at Fermi National Accelerator Laboratory.

DEPUTY SECRETARY'S MESSAGE

I am proud to present the Department of Energy's 2005 Real Property Asset Management Plan.

The success of the Department of Energy in meeting its mission is directly linked to the efficient and effective management of its real property portfolio. The portfolio is comprised of diverse, technically complex, and one-of-a-kind facilities with a value of over \$77 billion. It is a mission enabler not only from the capabilities that it provides, but also from the ability of these world class facilities to attract and retain the best and brightest people. We owe it to the public and our people to be good stewards and to provide safe and quality work places that are aligned and supportive of our mission requirements.



This plan provides the overall framework within which we will manage our vital facilities. The management improvements that have been developed and are being implemented are in clear support of the President's Management Agenda initiative on real property. Efficient and effective management of the portfolio will eliminate waste and free up critical resources.

I and the leadership of the Department are committed to execution of this plan so that we achieve the same level of recognition as world class leaders of real property management, as we have in the research and scientific community.

A handwritten signature in black ink that reads "Clay Sell". The signature is written in a cursive, flowing style.

Clay Sell
Deputy Secretary, U.S. Department of Energy





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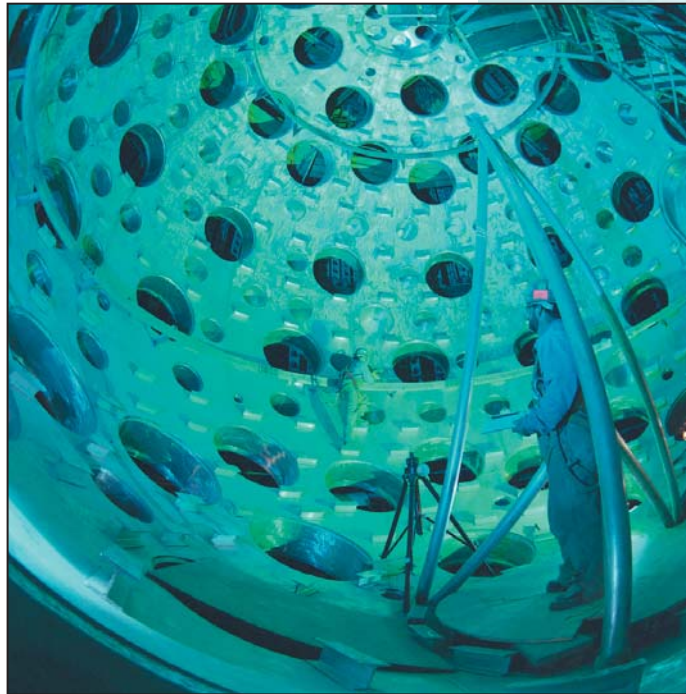
BACKGROUND

ABOUT DOE

The Department of Energy contributes to the future of the Nation by ensuring energy security; maintaining the safety, security, and reliability of the nuclear weapons stockpile; cleaning up the environment from the legacy of the Cold War; and developing innovations in science and technology. After 27 years in existence, the Department now operates 20 preeminent research laboratories and 4 power marketing administrations, and manages the environmental cleanup from 50 years of nuclear defense activities that impacted 2 million acres in communities across the country. The Department has an annual budget of about \$24 billion for FY 2005 and employs about 15,000 Federal and 100,000 contractor employees.

The origins of the Department can be traced to the Manhattan Project and the race to develop the atomic bomb during World War II. The Atomic Energy Act of 1946 created the Atomic Energy Commission, which took over the Manhattan Project's sprawling scientific and industrial complex. The Atomic Energy Commission was specifically established to maintain civilian government control over the field of atomic research and development. The Atomic Energy Act of 1954 ended exclusive Government use of the atom and began the growth of the commercial nuclear power industry, giving the Atomic Energy Commission authority to regulate the new industry.

In the 1970's, the Atomic Energy Commission was abolished 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 to manage the nuclear weapons, naval reactors, and energy development programs.



Interior of the National Ignition Facility target chamber.

However, the extended energy crisis of the 1970's soon demonstrated the need for unified energy organization and planning. Established on October 1, 1977, the Department of Energy assumed the responsibilities of the Federal Energy Administration, the Energy Research and Development Administration, and parts and programs from several other agencies.



The National Nuclear Security Administration Act, signed into law on October 5, 1999, created the National Nuclear Security Administration (NNSA) as a separately organized 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.

Throughout its history, the Department has shifted its emphasis and focus as the needs of the Nation have changed. During the late 1970's, the Department emphasized energy development and regulation. In the 1980's, nuclear weapons research, development, and production took a priority. Since the end of the Cold War, the Department has focused on environmental cleanup of the nuclear weapons complex, nuclear nonproliferation and nuclear weapons stewardship, reliable energy supplies and delivery, energy efficiency and conservation, research, and technology transfer.

The Department of Energy's overarching mission is to advance the national, economic and energy security of the United States; to promote scientific and technological innovation in support of that mission; and to ensure the environmental cleanup of the national nuclear weapons complex.

The Department has four strategic goals for achieving its mission:

- **Defense Strategic Goal:** To protect our national security by applying advanced science and nuclear technology to the Nation's defense.

- **Energy Strategic Goal:** To protect our national and economic security by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy.
- **Science Strategic Goal:** To protect our national and economic security by providing world-class scientific research capacity and advancing scientific knowledge.
- **Environment Strategic Goal:** To protect the environment by providing a responsible resolution to the environmental legacy of the Cold War and by providing for the permanent disposal of the Nation's high-level radioactive waste.

Science and technology are the Department's principal tools in the pursuit of its mission. The Department has amassed tremendous scientific and technical capabilities serving America in ways never anticipated at the time of its creation. Those capabilities are applied to achievement of its strategic goals and ultimate success.

DOE REAL PROPERTY

The Department's real property assets are vital to the accomplishment of its mission. Like human capital, the facilities portfolio is an enabler that cuts across all of DOE's activities. Real property assets of the Department are located at over 50 sites across the Nation with approximately 20,000 buildings and other structures covering 127 million square feet on 3.1 million acres of land, an area roughly the size of the state of Connecticut. The replacement plant value of these assets (not including land value) is \$77.1 bil-

lion (Figures 1 and 2). Unlike most other Federal agencies, the vast majority of Department sites are government owned and contractor operated and maintained. The Department's real property portfolio is composed primarily of large complexes of diverse facilities including highly unique, high-value facilities of critical importance to the DOE mission including reactors and accelerators. Facility management at these sites resembles the management of towns or small cities. Infrastructure management is a high-risk concern for the Department. Resource constraints and ineffective management practices over time have impacted the ability of its real property portfolio to support the Department's missions. Recently,

DOE'S CURRENT REAL PROPERTY ASSETS	
■ Land	3.1 million acres
■ Buildings	
– Owned	127.2 million gross square feet
– Laboratories	31.4 million gross square feet
– Production	44.6 million gross square feet
– Office	17.5 million gross square feet
– Leased	5.4 million gross square feet
The total replacement value of improvements (not including land) is \$77.1 billion.	

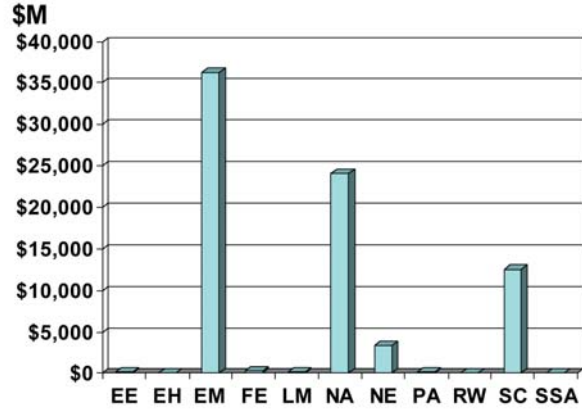
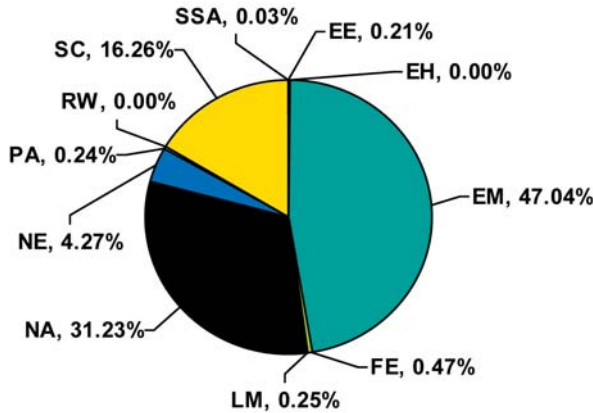
the Department has made significant progress in bringing a new focus to the challenge of effective real property management through the implementation of comprehensive corporate policies to improve the effectiveness and

FIGURE 1. MAJOR DOE LABORATORIES AND FIELD FACILITIES



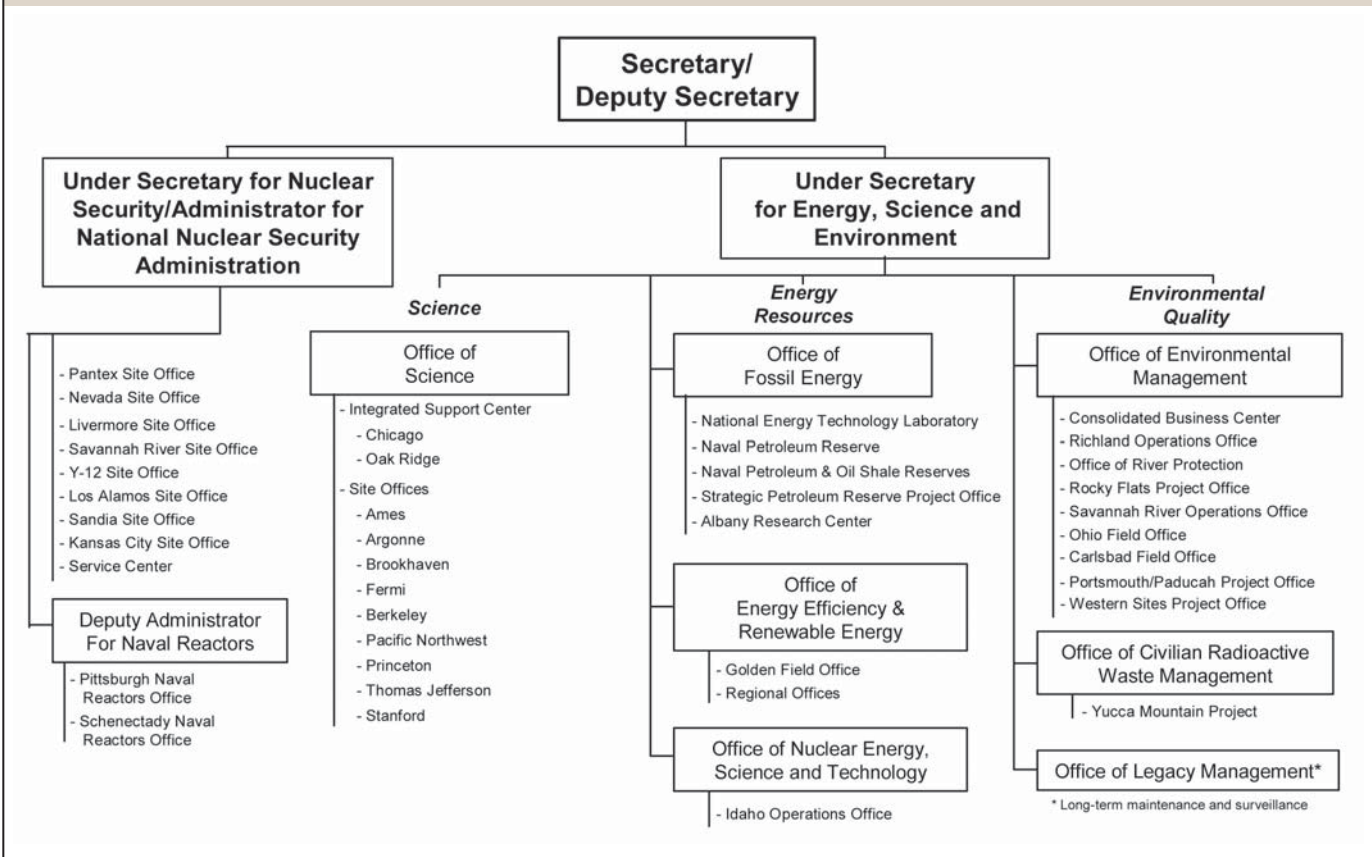
FIGURE 2. REPLACEMENT PLANT VALUE

Replacement Plant Value
(FY 2004 total, excluding land, = \$77.108 billion)



EE – Energy Efficiency
 FE – Fossil Energy
 NE – Nuclear Energy
 SC – Science
 EH – Environmental Health
 LM – Legacy Management
 PA – Power Marketing
 SSA – Office of Security and Safety Performance Assurance
 EM – Environmental Management
 NA – Nuclear Security
 RW – Radioactive Waste

FIGURE 3. DEPARTMENT OF ENERGY FIELD/PROGRAM RELATIONSHIPS



efficiency of the Department's approach to facilities management.

The Department is organized into programs that are dedicated to specific DOE mission areas (Figure 3). The largest programs in the Department in terms of real property assets are the National Nuclear Security Administration, the Office of Science (SC), and the Office of Environmental Management (EM). NNSA reinvigorates the security posture throughout the nuclear weapons program at 11 site offices including 3 National Laboratories and manages several national security programs: the Stockpile Stewardship Program, which encompasses operations associated with manufacturing, maintaining, refurbishing, surveilling, and dismantling the nuclear weapons stockpile; Nuclear Nonproliferation, the detection and prevention of the proliferation of weapons of mass destruction; and Naval Reactors which provides research, training, and oversight for the Naval Nuclear Propulsion Program. SC leads world-class research, operating 10 large National Laboratories to drive dramatic advances in energy related sciences—high energy physics, nuclear science, plasma science, material and chemical sciences, advanced scientific computing, and biological and environmental sciences. These laboratories perform research and development that is not well suited to university or private sector research facilities because of its scope, infrastructure, or multidisciplinary nature, but for which there is a strong public and national purpose. EM cleans up the legacy from 50 years of nuclear weapons production and nuclear energy research at 37 sites

around the country, and includes the stabilization and disposition of some of the most hazardous materials known. The Department will consolidate its facilities and reduce the size of its real estate holdings when it is in the public's interest. Where required, the Office of Legacy Management will conduct long-term surveillance and maintenance activities to assure that cleanup activities remain protective of human health and the environment.

The Deputy Secretary is ultimately responsible for oversight of all real property assets within the Department. Specific responsibilities are delegated within the Department through DOE Order 430.1 B. These responsibilities are more fully discussed in the Accountabilities and Responsibilities section.



REAL PROPERTY ASSETS VISION

The Department of Energy's portfolio of real property assets is integral to the accomplishment of its core mission. The portfolio will be managed efficiently and effectively to ensure that the portfolio can meet current and future needs, when and where they are needed, by the most economical means available.

The Department is realizing this vision through implementation of a holistic, performance-based approach to real property asset management which is

based on complete and accurate facilities data and the application of a business case analysis framework over the facilities' life cycle.



Dish Stirling Solar Power System at the Arizona Public Service Solar Test and Research Center.

GOALS AND STRATEGIES

The Department's real property assets are vital to the accomplishment of its mission. Like human capital, the facilities portfolio is an enabler that cuts across all of DOE's activities. The Department has established the following goals and strategies to guide and evaluate management of its real property assets. Program offices will ensure their programs and guidance to their sites are aligned with these overarching goals and strategies, and will include specific targets in their annual program guidance.

GOAL 1

Real Property Alignment – The portfolio of real property assets meets current and future agency missions.

STRATEGIES

- Program Offices will develop and promulgate mission projections, requirements, direction, and guidance for a ten-year planning horizon in support of the Departmental Strategic Plan and five-year planning guidance.
- Comprehensive Site Plans will assess real property assets against delineated program requirements at each major site. The plans identify and prioritize real property asset projects and activities required to meet program mission requirements.
- Real property acquisition strategies will be based upon identified mission needs and life-cycle business-case analysis of alternatives.
- Real property inventory will be managed to ensure that inventory which is not fully utilized or excess to identified needs is minimized through either reuse or disposal.

GOAL 2

Real Property Quality – The portfolio of real property assets is in a condition to adequately support intended mission requirements and provide a quality workplace.

STRATEGIES

- The condition of all real property will be assessed at least once every five years to identify deterioration and safety related deficiencies.
- Ten Year Site Plans will include prioritized sustainment and recapitalization requirements to ensure that the condition and quality of the real property portfolio is supportive of mission requirements.



- Real property will be designed, built, and maintained in accordance with applicable regulatory codes and standards, including commitments to external stakeholders.

GOAL 3

Portfolio Management – The portfolio of real property assets will be effectively and efficiently managed.

STRATEGIES

- Ten Year Site Plans and supporting resource plans will be kept in alignment to reflect changing needs and priorities.
- Qualified Federal facilities management staff will be assigned at all levels to ensure accountability. Necessary skill sets will be identified and developmental and certification programs developed and executed for facilities management staff.
- Inventory and information management systems will be kept current and accurate to support management decisions.
- Appropriate performance measures will be used to assess outcomes against expectations.
- The Earned Value Management System (ANSI 748) will be used as an integral component of project management to ensure effective management of capital acquisition projects.



Sandia National Laboratory scientists review procedures inside the largest of the Gamma Irradiation Facility's three test cells.

PLANNING CONSIDERATIONS

GUIDING PRINCIPLES

There are ten guiding principles that govern all aspects of real property asset management at DOE. DOE's real property management will:

- Support DOE's mission and strategic goals
- Provide for safe, secure, and healthy workplaces
- Use public and commercial benchmarks and best practices
- Employ life-cycle cost-benefit analysis
- Promote full and appropriate utilization
- Dispose of unneeded assets
- Provide appropriate levels of investment
- Accurately inventory and describe all assets
- Employ balanced performance measures
- Advance customer satisfaction

DRIVERS

Executive Order 13327 of February 4, 2004, mandated the creation of this plan and also created the Federal Real Property Council which provides planning guidance.

Executive Order 13327, *Federal Real Property Asset Management*, was issued on February 4, 2004, to improve the management of Federal real property. This Executive Order increases management attention through establishment of the position of Senior Real Property Officer at executive branch agencies, creation of the Federal Real Property Council to develop asset management guidance and performance measures, and implementation of agency asset management plans.

Federal Real Property Council. The Federal Real Property Council was

established by Executive Order 13327. This council, under the administrative control of the Office of Management and Budget (OMB), is made up of all agency-designated Senior Real Property Officers, the Controller of OMB, and the Administrator of General Services. It is chaired by OMB's Deputy Director of Management. The council is charged with developing asset management guidance and performance measures, implementation of agency Asset Management Plans, incorporation of the planning and management requirements for historic property under Executive Order 13287, and for environmental management under Executive Order 13148.

DOE Strategic Plan. In September 2003, the Department issued a strategic plan that charts its course for the next 25 years. The mission, goals, strate-

“ . . . Our facilities and infrastructure are essential to the efficient and safe execution of this Department's mission to the Nation. We must not forget that these facilities have been constructed at a great cost to the citizens of this country and they rightfully expect us to properly utilize and maintain them. This Department will honor and take pride in this public trust by demonstrating good stewardship of these assets . . . ”

*Secretary of Energy
Samuel W. Bodman*

gies, and objectives contained in the strategic plan provide clear direction to the program offices responsible for achieving results and success. DOE's success will only be accomplished with adequate financial, human, facility, infrastructure, and technical resources. This Real Property Asset Management Plan addresses how DOE's facility and infrastructure resources will be managed, and must therefore be in complete alignment with and responsive to the Department Strategic Plan. The DOE Strategic Plan can be found at <http://strategicplan.doe.gov/>.

MANAGEMENT DIRECTIVES

In response to the need to establish consistent processes and decision making across DOE, the Department of Energy has issued several primary orders and policies which govern the management of DOE real property assets. These directives establish reporting requirements and define roles

and responsibilities for real property planning and management. General provisions of the directives are outlined below. For further detail, key directives are included as appendices.

DOE Policy 580.1, *Management Policy for Planning, Programming, Budgeting, Operation, Maintenance and Disposal of Real Property* was issued on May 20, 2002, to establish management policy for DOE's holistic planning, programming, budgeting, and evaluation system that links real property assets, and the resources dedicated to them, to mission performance. This policy is implemented in the Department through DOE Order 430.1B, *Real Property Asset Management (RPAM)*.

DOE Order 430.1B, *Real Property Asset Management (RPAM)* (Appendix A – <http://directives.doe.gov/pdfs/doe/doetext/neword/430/o4301b.pdf>), adopted September 24, 2003, is the key facility stewardship document



Aerial photograph of Fermi National Accelerator Laboratory, Batavia, Illinois.

applicable to all DOE elements with responsibility for real property assets. It establishes a corporate, holistic and performance based approach to real property life cycle management linking planning, programming, budgeting, and evaluation to program mission projections and performance outcomes. The Order identifies the requirements and reporting mechanisms for real property asset management. Key elements of real property asset management are establishment of corporate performance goals and measures, the requirement to assign qualified DOE facilities personnel at headquarters and at field elements, the requirement to periodically inspect all real property assets, and the establishment of Ten Year Site Plans as the mechanism to link real property asset management to program missions. The Ten Year Site Plans are the Department's building-block asset business plans that form the foundation of the asset management

process at DOE. The Ten Year Site Plans are site-specific real property asset business plans that address how the site's real property assets will support the DOE strategic plan, the Secretary's planning guidance and specific program objectives. They contain a prioritized schedule and budget and integrated management plan for real property asset projects, capital acquisition projects, operations and maintenance and recapitalization requirements, disposition projects, and long-term stewardship requirements. The Order enables the Department to better carry out its stewardship responsibilities, and ensures that its portfolio of facilities and infrastructure are properly sized and in a condition to meet mission requirements today and in the future. Attachment 3 of the Order contains definitions and explanations of terms used throughout this plan. Roles and responsibilities under the Order are discussed in the Accountability and Responsibilities sec-



The Entombed Nuclear Reactor at Piqua, Ohio is cared for by the Long-term Surveillance and Maintenance Program.





tion and the planning process is more fully discussed in the Planning Implementation section.

DOE Order 413.3, *Program and Project Management for the Acquisition of Capital Assets*, (Appendix B – <http://directives.doe.gov/pdfs/doe/doetext/neword/413/o4133.pdf>), adopted October 13, 2000, assigned responsibility to Federal program and project managers for ensuring that capital asset projects are managed with integrity and in compliance with applicable laws. The Order provides Departmental project management direction for the acquisition of capital assets with a total project cost greater than \$5 million. The Order sets forth the decision framework for acquisition management, establishes roles and responsibilities for managers at all levels, and establishes requirements for project documentation, project reviews, and reporting at each phase of the project including the project initiation phase, the project definition phase, and the project execution phase leading up to project completion. The Critical Decision framework (based on guidance from the Office of Management and Budget) ensures projects are fully documented, justified, and approved at each phase before proceeding to the next phase. The Order also requires the use of earned value management for acquisitions costing \$20 million or more, and establishes requirements for independent project reviews. The requirements of DOE Order 413.3 are more fully discussed under Life Cycle Facilities Management in the Planning Implementation section.

DOE Manual 413.3-1, *Project Management for the Acquisition of Capital Assets* (Appendix C – <http://directives.doe.gov/pdfs/doe/doetext/neword/413/m4133-1.pdf>), adopted March 28, 2003, implements DOE Order 413.3. It identifies the requirements that shall be followed by all capital acquisitions greater than \$5 million including requirements for business case alternatives and the identification of the roles and responsibilities of key individuals for successful project execution.

DOE Order 433.1, *Maintenance Management Program for DOE Nuclear Facilities*, adopted June 1, 2001, establishes the requirement for all nuclear maintenance management programs to contain a DOE-approved Maintenance Implementation Plan to ensure that nuclear facilities are operated inside a zone of safety known to protect workers, the public, and the environment from the risk of radiological exposure. Integrated Safety Management is employed to make safety planning an integral part of site strategic planning.

DOE Order 450.1, *Environmental Protection Program*, adopted January 24, 2005, requires DOE elements to establish an Environmental Management System (EMS) as part of the site's Integrated Safety Management System (ISMS). This order was developed to implement the requirements of Executive Order 13148, *Greening the Government Through Leadership in Environmental Management*. This Executive Order requires the implementation of EMS at appropriate facilities by December 31, 2005. DOE O 450.1, Chg. 1, also requires the incorporation of planning and management requirements

for historic property and environmental management pursuant to Section 3 (b) (vi) of Executive Order 13327, *Federal Real Property Asset Management*.

DOE'S UNIQUE ENVIRONMENT, SAFETY AND HEALTH AND SECURITY CONSIDERATIONS

The responsibilities of Federal ownership and management of real property are enormous as the Federal government owns hundreds of billions of dollars in property assets. In addition to managing office buildings, automotive fleets, and more standard types of government property, a number of DOE facilities such as laboratories, petroleum storage caverns and former weapons production plant sites possess unique environmental, safety, health, and security considerations. The Department's environmental legacy responsibilities stem primarily from the activities of the Department and predecessor agencies, particularly during World War II and the Cold War. Since the end of the Cold War, the Department has focused on environmental cleanup of the nuclear weapons complex, nuclear nonproliferation, nuclear weapons stewardship, and reliable energy supplies. Related property asset management responsibilities span cleanup sites that are in the process of environmental remediation, sites where environmental remediation has been completed, as well as determining how Federal land and other assets will be returned to the most beneficial use consistent with the Department's mission requirements.

In the National Nuclear Security Administration, the process of modernizing the nation's defense complex is underway.

The Facilities and Infrastructure Recapitalization Program (FIRP) was established to restore, rebuild, and revitalize the physical infrastructure of the nuclear weapons complex. Large portions of this increase have gone to the Sandia and Los Alamos National Laboratories, the Pantex and Y-12 Plants, and other NNSA sites. The recently issued report by the National Academy of Science entitled *"Intelligent Sustainment and Renewal of DOE Facilities and Infrastructure"* singled out NNSA for their significant progress made to date. As facilities are enhanced and upgraded, such as the new state-of-the-art simulation facility at Lawrence Livermore Laboratory to develop America's lead in supercomputers, real property management will need to ensure that special facility requirements are met, such as cyber security.

DOE leads the world in the conception, design, construction, and operation of large-scale devices such as the Stanford Linear Accelerator Center. These machines have enabled U.S. researchers to make some of the most important scientific discoveries of the past 70 years, with spin-off technological advances leading to entirely new industries.

In terms of safety, both DOE nuclear and non-nuclear facilities have unique worker safety concerns. All real property will be designed, built, and maintained in accordance with applicable regulatory codes and standards, including commitments to external stakeholders. DOE's Epidemiologic Surveillance Program conducts ongoing health monitoring of active workers, enhancing the Department's ability

to protect worker health and identify potential occupational illnesses in the nuclear weapons complex.

ENERGY AND UTILITIES MANAGEMENT

DOE Order 430.2A, adopted April 15, 2002, establishes the Department, field element, and site goals for energy and water conservation as well as criteria for DOE owned utility management. The order is applicable to all DOE elements. It applies and promotes goals and criteria outlined in various applicable laws, Executive Orders and Federal regulations pertaining to energy and environmental conservation. Largely performance oriented, the order establishes energy management processes and plans to meet both short-term and longer-term energy goals. It contains numerous energy conservation best practices, e.g., purchase of “Energy Star” rated products and provides a responsibility framework for application of Demand Side Management and Energy Savings Performance Contracts as alternative funding mechanisms for energy conservation.

LIFE CYCLE

The management of real property assets must take a corporate, holistic, and performance-based approach to real property life-cycle asset management that links real property asset planning, programming, budgeting, and evaluation to program mission projections and performance outcomes. Acquisitions, sustainment, recapitalization, and disposal should be balanced to ensure real property assets are available, utilized, and in a suitable condi-

tion to accomplish DOE’s mission.

The components of life cycle facilities management are more fully discussed in the Planning Implementation section of this plan. The application of life cycle facilities management within the Department is mandated by DOE Orders 430.1B and 413.3, at Appendix A and B, respectively.

SOCIO-ECONOMIC RESPONSIBILITY

DOE has a significant effect on many of the communities where its research laboratories, sites, and field offices are located. There is also a socio-economic responsibility on the part of the Department that involves the quality of life and manner in which expansion or operations at facilities are conducted because it is a government agency. There is a responsibility to serve the communities that it is currently working in to make sure that it mitigates any potential negative impacts such as environmental pollution or noise.

DOE recognizes its stewardship responsibilities for managing the cultural resources on DOE-owned lands. DOE has 21 properties listed on the National Register of Historic Places. Of the 21 properties, 10 are standing structures and the remaining archeological sites. Also, there are 40 properties that have been designated as eligible for the National Register of Historic Places. This data were retrieved from the National Park Service, National Register Information System. DOE policies, orders, and guidance documents that ensure adequate protection of these sites include: DOE Policy 141.1, *Management of Cultural Resources*, DOE Order 450.1, *Environmental Protec-*

tion Program, DOE Policy 454.1, Use of Institutional Controls, DOE Order 430.1B, Real Property Asset Management, and DOE Guidance 450.1-3, Environmental Guidelines for Development of Cultural Resource Management Plans-Update.

DECISION MAKING

DOE employs a business-case framework for facilities analysis to ensure that decisions reflect the best value over time. All decisions are based on the facility life cycle, considering acquisition, operation/maintenance, and recapitalization during the life of the facility; disposition; and post-disposition requirements. For any analysis, a range of alternatives will be considered and developed, with full documentation of underlying assumptions and costs. The objective is to ensure that decision makers have all of the information available to make informed decisions. All life cycle analyses will be conducted in accordance with OMB Circular A-94. DOE has developed automated tools to assist in facilities analysis and ensure reliability of facilities data to facilitate informed decision making at all levels. Responsibilities and authorities for effective management of DOE real property assets are contained in DOE Order 430.1B, at Appendix A. Responsibilities and authorities for capital acquisitions are contained in DOE Order 413.3, at Appendix B.

INDUSTRY BENCHMARKING

To improve the efficiency and effectiveness of asset management, benchmarking of organizational processes against recognized leaders in both the public

and private sectors will help identify opportunities for improvement. While the Department's asset portfolio includes highly unique facilities for which comparable private sector facilities do not exist, these differences do not fundamentally change the need to benchmark and to apply the best business practices and policies to foster efficiency and effectiveness in the management of real property portfolios. The Department will explore benchmarking opportunities with other Federal agencies having Federally Funded Research and Development Centers and other recognized leaders in government, academia, or the private sector, and implement best practices where applicable. Tailoring of identified best practices and process improvements is to be expected to make them adaptable. Benchmarking opportunities will be pursued at all levels of the Department and by our supporting contractor communities.

Examples of Departmental benchmarking include:

- Facilities sustainment – DOE uses the National Academy of Sciences' industry benchmark of a recommended standard for annual sustainment funding of two to four percent of replacement plant value in determining the adequacy of sustainment funding. The Department will also be evaluating the benchmarking efforts that the Department of Defense has made in the area of sustainment.
- Facilities recapitalization – DOE has developed models for the recapitalization of its portfolio based on standards identified by the National



Association of College and University Business Officers and the National Research Council. The National Nuclear Security Administration is executing the Facilities and Infrastructure Recapitalization Program, which was noted by the National Academy of Sciences as a potential model for the Department.

- Asset acquisition/project management – DOE uses 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 costing \$20 million or more.
- The Department is currently performing a benchmarking study through a professional research

foundation to assess its effectiveness in the acquisition of facilities compared to a national benchmark database. This study will be completed in 2005 and the Department will use the results to focus and improve its acquisition process.

- Site management – DOE sites are primarily government-owned, contractor-operated. The Energy Facility Contractors Group (EFCOG) is a self-directed group of principal contractors of DOE facilities. One of the EFCOG objectives is to promote, coordinate and facilitate the active exchange of successful programs, practices, procedures, and lessons learned among the operating contractors to improve the overall management of the sites.



Department of Energy Forrester Building, Washington, DC.

ACCOUNTABILITY AND RESPONSIBILITIES

A key element of real property asset management is the establishment of clear accountability and responsibility throughout the organizational hierarchy or chain of command.

The Secretary establishes corporate policy for real property asset management and the Deputy Secretary, as DOE's Chief Operating Officer, exercises responsibility for implementation by Departmental elements. The Secretary will provide specific real property asset management directives, requirements and expectations in the Department's annual planning guidance.

- **Senior Real Property Officer (SRPO)**

The Secretary has designated the Director, Office of Engineering and Construction Management (OECM) as the Department's appointed Senior Real Property Officer (SRPO) responsible for implementation of the requirements of E.O. 13327 and for promulgating policy for the management of DOE facilities. The National Nuclear Security Administration Act limits the exercise of authority, direction, and control over the Administrator for Nuclear Security to the Secretary with redelegation authority to the Deputy Secretary. Because of NNSA's semi-autonomous authority, the Senior Real Property Officer exercises his assigned policy role through the Deputy Secretary for issues impacting the NNSA. Oversight is provided pursuant to established policy and provisions of Departmental directives. The preparation and maintenance of this Real Property Asset Management Plan is the responsibility of the SRPO.

The following primary areas of responsibility for real property asset management are identified in DOE Order 430.1B, *Real Property Asset Management*:



The canister storage building vault where workers are seen moving a tube to the lift site with special wheeled dollies.

- **Office of Engineering and Construction Management (OECM)**

OECM develops, promulgates, and maintains policies and procedures to implement and sustain an effective corporate, holistic, performance-based program for real property asset management, including planning, real estate, acquisition, maintenance and recapital-

ization, disposition, long-term stewardship, value engineering, and performance goals and measures. OECM also provides facilities management technical and management support to the Department and develops and manages professional training and certification programs.

■ **Lead Program Secretarial Office (LPSO)**

These are program secretarial offices that own a site and have overall responsibility for facilities asset management at the site. They are line managers accountable to the Secretary for proper stewardship of real property including maintaining the condition of infrastructure to support mission activities reliably, efficiently, and effectively. They develop components in the DOE Strategic Plan and in the program

office’s strategic plan that link their real property assets to their missions and establish the basis for planning and budgets. They also develop annual direction and guidance for mission projection and budgets, approve Ten Year Site Plans, and declare and report excess real property. The LPSO at a multi-program site has the additional responsibility to act as a host landlord for its tenant Cognizant Secretarial Offices/Program Secretarial Offices.

■ **Cognizant Secretarial Office (CSO)/Program Secretarial Office (PSO)**

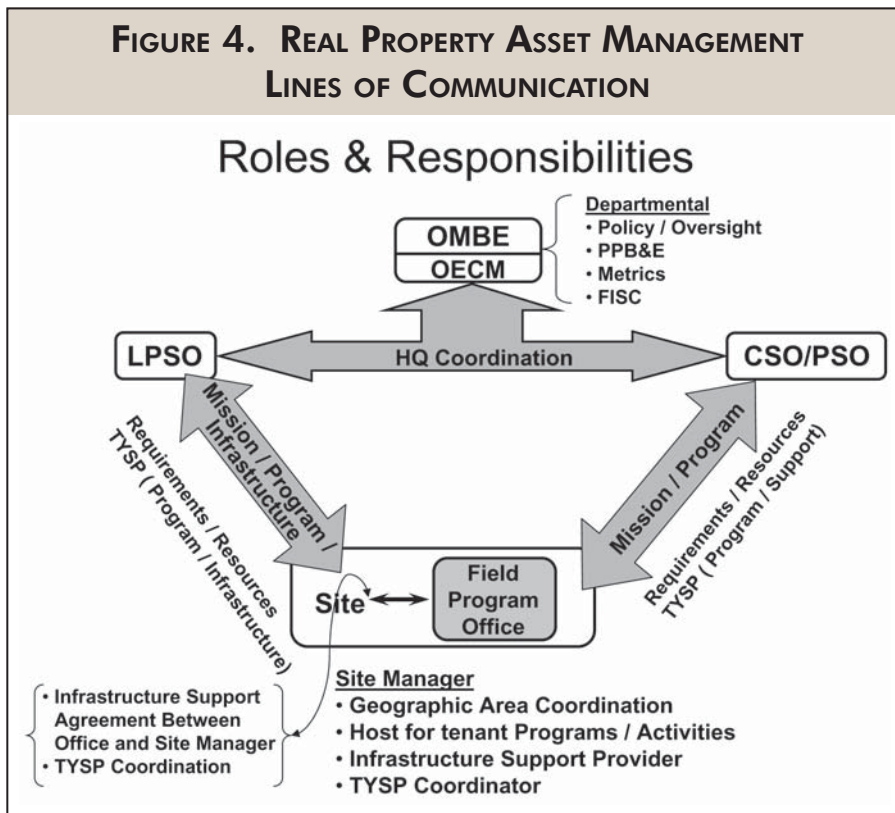
The CSO/PSO for a site is a program office that has responsibility for a program facility (CSO) or for program work conducted in a facility owned by another program (PSO). The CSO/PSO issues program missions, budgets,

and planning estimates covering a ten-year planning horizon for their program-related work and/or real property assets and approves elements of Ten Year Site Plans related to their programmatic responsibilities at related sites.

■ **Site/Field Manager**

Site/Field Managers are accountable to the LPSO for proper stewardship of real property assets at the site, including maintaining the condition of infrastructure to support mission activities reliably, efficiently, and effectively. They oversee implementation of the requirements of Real Property Asset Management at their site, develop requisite performance measures to gauge facilities operations, ensure mission resource requirements for real property assets are reflected in Ten Year Site Plans, and ensure technically competent staff for all functional areas of real property management. Site/Field Managers perform a key role coordinating landlord program and tenant activities and their real property asset needs at the site.

Successful real property asset management depends upon good communication. The chart shown in Figure 4 depicts the lines of communication.



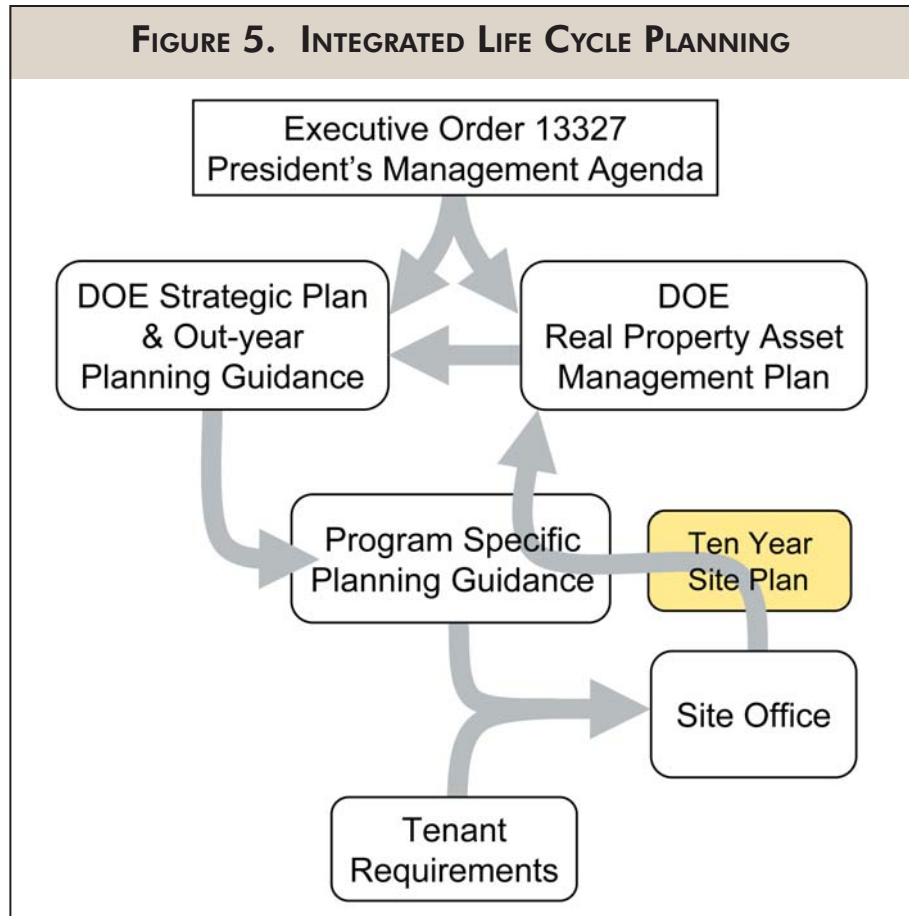
PLANNING IMPLEMENTATION

The DOE facilities planning process starts with the DOE Strategic Plan that establishes the Secretary's long range vision for the Department.

The near-term direction is contained in the Secretary's Annual Planning Guidance which covers a five-year time horizon and communicates specific requirements and expectations to the Programs. The Programs then issue Program Guidance to sites. The Program Guidance contains specific site requirements and expectations based upon guidance from the Secretary and other sources. The site manager prepares the site-wide Ten Year Site Plan based on program guidance and locally identified requirements, including tenant requirements. The Ten Year Site Plans are reviewed and approved by the responsible LPSO. This approval process serves as the communication vehicle to ensure that expectations and accountabilities are clearly delineated and understood. Ten Year Site Plans establish expectations against which outcomes can be measured and form the foundation for DOE's Real Property Asset Management Plan. The Ten Year Site Plan ties mission needs to facilities' requirements and project resource requirements for a ten-year planning horizon. It addresses how a site's real property assets will support the Department's strategic plan, the Secretary's five-year planning guidance, and appropriate program guidance. The Ten Year Site Plan is a comprehensive site-wide plan that integrates the needs of the landlord program and the site's tenant activities and documents

the linkage of real property asset plans to site mission and budget projections. It includes prioritized real property asset projects and activities required to meet program missions, budgets, and planning estimates. These include acquisition projects, elimination of excess property projects and activities, maintenance and recapitalization plans, disposition projects, and long-term stewardship requirements. The Ten Year Site Plan addresses space utilization activities and land use that stabilize and then reduce costs by consolidating operations where practicable and eliminating excess facilities. Site planning for real property assets should be based on accepted planning principles and industry-wide practices. The format of the Ten Year Site Plan should be consistent within a program in accordance with program direction and guidance. Ten Year Site Plans are kept current to reflect changing needs, priorities, and fiscal decisions. Figure 5 shows the relationship between the documents affecting DOE's real property asset management. The requirement for the Ten Year Site Plan is contained in DOE Order 430.1B, at Appendix A.





This is a dynamic process that provides documented opportunities for direction, planning, execution, feedback, and adjustment.

LIFE CYCLE FACILITIES MANAGEMENT

The key to effective facilities management is integration of the facilities planning process over the life cycle of the facility. Figure 6 and the accompanying discussion illustrate the basic components of the life cycle facilities management process. The detailed application of this process within DOE is fully discussed in DOE Order 430.1B, at Appendix A.

Planning. Planning is the overarching function within real property asset

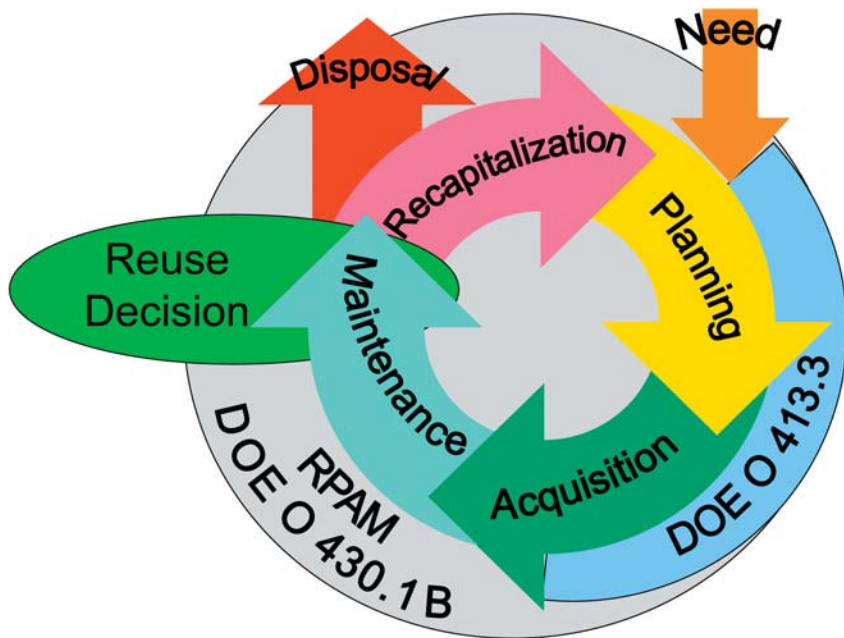
management that integrates the other functions of acquisition, real property utilization, maintenance, recapitalization, disposition, and long-term stewardship into a coordinated effort to ensure that current and future mission needs are met as economically as possible. Planning is dependent on clear objectives, sound data, and effective communication. The cornerstone of facilities planning at DOE is the Ten Year Site Plan. The content of the Ten Year Site Plan addresses how the site’s real property assets will support the Department’s strategic plan, the Secretary’s five-year planning guidance, and appropriate program guidance. It includes prioritized real property asset projects and activities required to meet pro-

gram missions, budgets, and planning estimates. These include acquisition projects, elimination of excess property projects and activities, maintenance and recapitalization plans, disposition projects, and long-term stewardship requirements. The Ten Year Site Plan addresses space utilization activities and land use that stabilize and then reduce costs by consolidating operations where practicable and eliminating excess facilities. It is a comprehensive site-wide plan encompassing the needs of tenant activities. Site planning for real property assets should be based on accepted planning principles and industry-wide practices. The format of the Ten Year Site Plan should be consistent within a program in accordance with program direction and guidance.

Acquisition. Acquisition of real property assets to satisfy a documented

need can be through lease acquisition, renovation/reuse, or construction. Acquisition planning should include life-cycle cost considerations and reflect a business case analysis of alternative solutions to justified needs. Projects with a total project cost greater than \$5 million will adhere to the process and requirements established in DOE Order 413.3, *Program and Project Management for the Acquisition of Capital Assets*, adopted October 13, 2000. The Order sets forth the decision framework for acquisition management, establishes roles and responsibilities for managers at all levels, and establishes requirements for project documentation, project reviews, and reporting at each phase of the project including the project initiation phase, the project definition phase, and the project execution phase leading up to project completion.

FIGURE 6. LIFE CYCLE FACILITIES MANAGEMENT



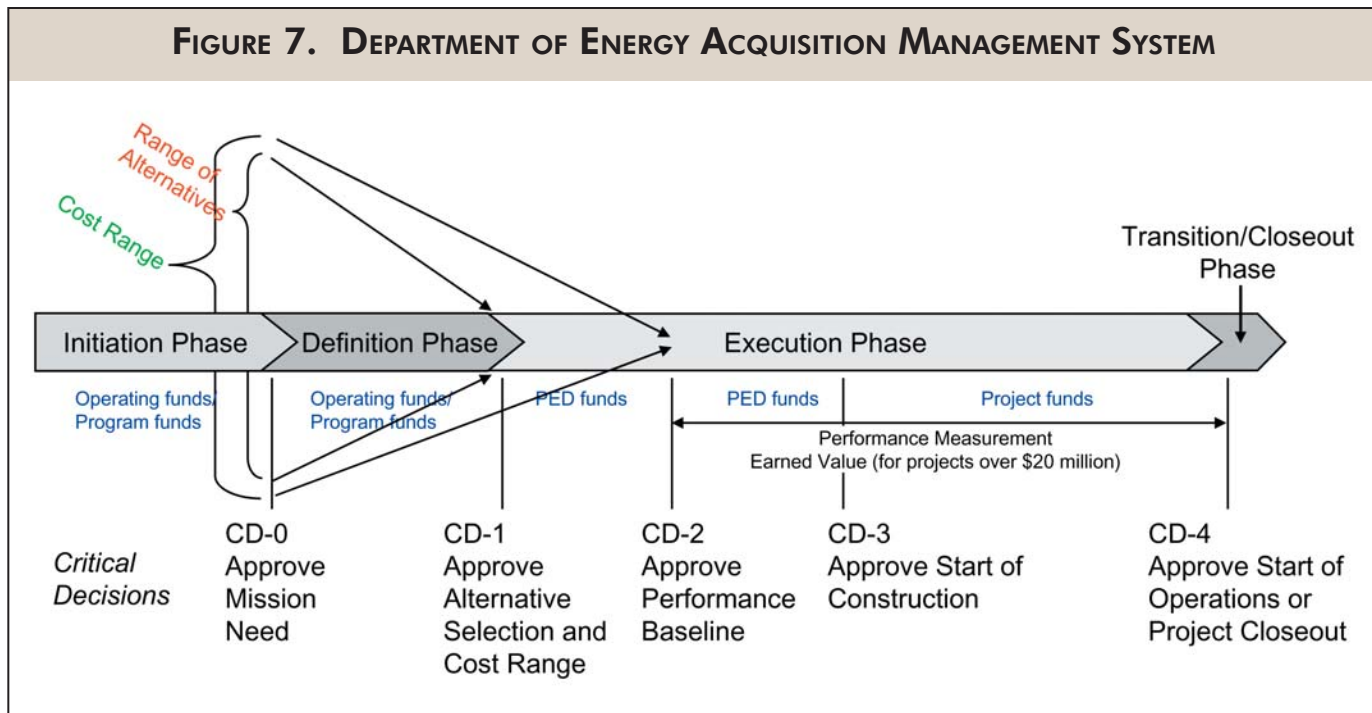


Figure 7 illustrates the Department’s overall Acquisition Management System.

The project phases represent a logical maturing of broadly stated mission needs into well-defined technical, system, safety, and quality requirements; and ultimately into operationally effective, suitable, and affordable facilities, systems, and other end products. Critical Decisions are major milestones where the Acquisition Executive approves recommended alternatives, strategies, performance baselines, and other essential elements of a project. At the most fundamental level, the decisions confirm that: (1) there is a need which cannot be met through nonmaterial means; (2) the selected alternative and approach is the right solution; (3) a definitive cost, scope, and schedule baseline has been developed; (4) the project is ready for implementation; and (5) the project is complete and ready for closeout. All projects with a total proj-

ect cost greater than \$5 million will use the defined Critical Decisions.

1. Critical Decision-0, Approve Mission Need
2. Critical Decision-1, Approve Alternative Selection and Cost Range

If leasing is the preferred acquisition methodology, the acquisition proceeds as a normal lease acquisition under the Federal Management Regulation under the supervision of a Certified Realty Specialist. If the preferred acquisition method is construction, the action continues to Critical Decision 2.

3. Critical Decision-2, Approve Performance Baseline
4. Critical Decision-3, Approve Start of Construction
5. Critical Decision-4, Start of Operations or Project Closeout

Maintenance and Recapitalization.

Real property assets will be maintained in a manner that promotes operational safety, worker health, environmental protection and compliance, property preservation, and cost effectiveness while meeting the program missions. This requires a balanced approach that not only sustains the assets but also provides for their recapitalization.

- Sustainment consists of maintenance and repair activities necessary to keep the inventory of facilities in good working order. Sustainment includes regularly scheduled maintenance and anticipated major repairs or replacement of components that occur periodically over the expected service life of the facilities. Lack of sufficient levels of sustainment can result in a reduction in service life. The Department uses the National Academies of Sciences’ recommended minimum of two to four percent of replacement plant value as a benchmark to assess the adequacy of sustainment funding across the portfolio of assets. Operating costs and other performance measures are used to assess the effectiveness of the investments.
- Facilities eventually wear out or become outdated and incapable of supporting mission needs. These facilities will be replaced, recapitalized, or disposed of if excess to needs. Recapitalization extends the service life of facilities or restores lost service life and consists of alterations and betterments needed to keep existing facilities modern and relevant in an environment of

changing standards and missions. Recapitalization investments do not sustain facilities and will, therefore, be complemented by an effective sustainment program to protect the facility.

- Sustainment and recapitalization requirements will be developed in support of the Department’s strategic plan, the Secretary’s five-year planning guidance, and appropriate program guidance.
- Condition assessments are required to be performed on all assets at least once every five years. Some real property assets, such as those that are mission critical or safety related, may require more frequent inspections. The Department’s condition inspection protocol involves a visual inspection of building and infrastructure systems and components performed by experienced engineers or technicians familiar with facility and infrastructure inspection procedures.

Disposition and Long-Term Stewardship (LTS).

Planning for disposition is initiated when real property assets are identified as no longer required for current or future programs. Disposition includes stabilizing, preparing for reuse, deactivating, decommissioning, decontaminating, dismantling, demolishing, and/or disposing of real property assets.

- Real property assets not fully utilized or excess to mission needs will be identified to facilitate reuse or disposal. Site/field managers will conduct an annual utilization survey to identify excess facilities

which are then reported to the responsible Program Offices who will review their overall program needs to determine whether excess real property reported to them is needed to support program missions or is excess to their requirements. Properties which they determine to be excess are reported to the Office of Engineering and Construction Management for Department-wide screening. The Office of Engineering and Construction Management will screen identified real property with all other Program Offices to determine whether the property is excess to the Department. If not accepted for transfer by another program, the Department will determine the most efficient and effective method for conducting clean-up and disposition of the facilities and materials through reuse, demolition, disposal, transfer, or sale based on reducing risks and minimizing life-cycle costs. DOE Order 430.1B covers the process and requirements in detail.

- Long-Term Stewardship includes the physical controls, institutions, information, and other mechanisms needed to ensure protection of people and the environment where DOE has completed, or plans to complete, disposition. Disposition and Long-Term Stewardship requirements are directly influenced by decisions made during the acquisition, maintenance, and operation of the assets. Decisions made during the utilization of assets need to consider their disposition and Long-Term Stewardship implications.

A balance should be established between accomplishment of DOE's mission and the disposition and Long-Term Stewardship required to reduce risks to workers and the public and minimize real property asset life-cycle costs.

- Disposition and Long-Term Stewardship activities should be consistent with the guiding principles and core functions of the Department's integrated safety management and facility disposition policies.
- Land-use plans should be tailored based on local site conditions and will consider the National Environmental Policy Act, site planning and asset management, Long-Term Stewardship plans, institutional control plans, stakeholder public participation, economic development under community reuse organizations, privatization of assets, environmental law, cultural asset management, historic preservation, and natural resource management.

Value Engineering. VE is an organized effort directed at analyzing the functions of systems, equipment, facilities, services, and supplies for the purpose of achieving the essential functions at the lowest life-cycle cost consistent with required performance, reliability, quality, maintainability, environmental protection, and safety.

INTEGRATED FACILITIES AND INFRASTRUCTURE (IFI) CROSSCUT BUDGET

Real property asset management is not complete unless the requirements identified through the integrated plan-

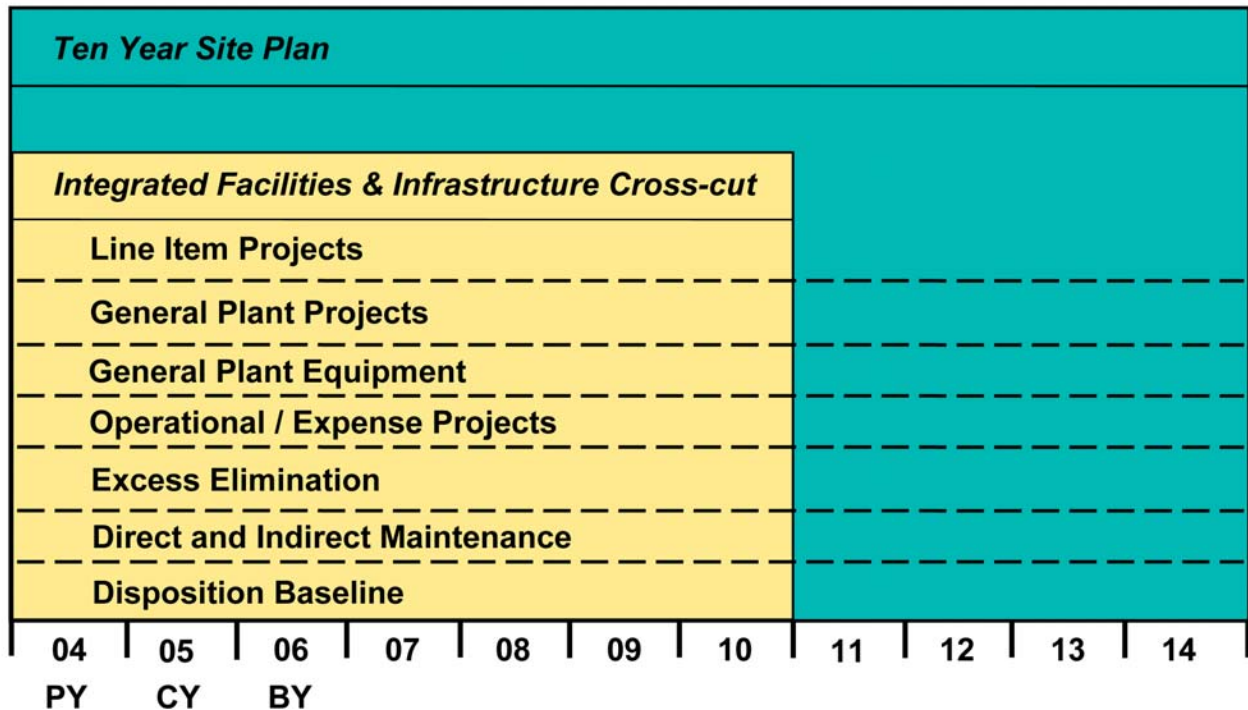
ning process discussed above are supported by a companion resource plan or budget. The two should be integrated and balanced to ensure that desired expectations and outcomes are met. The integration is dynamic requiring offsetting adjustments as they occur to either plan. Figure 8 is a representation of the integration of the Ten Year Site Plan with the Integrated Facilities and Infrastructure Crosscut Budget.

The Integrated Facilities and Infrastructure Crosscut budget exhibit is prepared annually and submitted with the Department’s budget to OMB and

the Congress. It provides a funding summary for the Department’s facilities and infrastructure for the current fiscal year through the budget year along with a summary for each of the Headquarters programs. Each of these summaries is a compilation of investments in facilities and infrastructure at Departmental sites that support its programmatic mission. The summaries include projects primarily for renovations, rehabilitation, and elimination of excess facilities, and monies for maintaining the current plant. Construction projects for general-purpose new and replacement facilities are also included.

The Integrated Facilities and Infrastructure Crosscut budget exhibit, together with the Department facilities and infrastructure data, are used in making reasoned and informed decisions on the management of its real property assets. It establishes a baseline against which DOE can assess budget submittals to insure that they are responsive to facilities management guidance and provides a tool for assessing the budget impacts of future targets relating to the facilities performance measures. The Integrated Facilities and Infrastructure Crosscut Budget is revised during the budget process as the overall budget changes.

FIGURE 8. BUDGET INTEGRATION



PY = Prior Year
CY = Current Year
BY = Budget Year

The IFI Cross-cut budget reflects the resources associated with the items identified

MEASURING PERFORMANCE

DOE has 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. Analysis of this data is used to assess outcomes against objectives and based on the results of this analysis, course corrections are made when warranted through input into the Secretary's planning guidance. This process forms a continuous cycle of measurement, evaluation and feedback

FACILITY INFORMATION MANAGEMENT SYSTEM

The Facilities Information Management System is the DOE corporate inventory system for tracking real property assets. This web-based system contains a variety of data elements on land,

data includes information on facility age, plant value, maintenance expenditure, condition, and utilization. Data is maintained throughout the facility life cycle and archived for historical purposes following facility disposition. The Facilities Information Management System data is inputted at the site level and is accessible at the Program and Headquarters level for review and analysis.

The Facilities Information Management System provides the data used for computation and analysis of DOE's facilities performance measures, the Asset Condition Index, Asset Utilization Index, mission dependency, and Operating Cost.

PROJECT ASSESSMENT AND REPORTING SYSTEM (PARS)

PARS is a web-based information management tool that provides a corporate capability to deliver reliable, accurate, complete, and timely project status information to DOE senior managers and key program stakeholders. PARS is a key element of the Department's project reform initiative launched in June 1999 to provide effective program and project acquisition systems such that DOE projects are delivered on time, within budget, and fully capable of



DOE and Argonne Administration Building.

buildings, trailers and other structures, and facilities owned or leased by DOE. The Facilities Information Management System supports DOE's planning and budgeting process and provides accurate facilities data to support budget formulation and execution. The Facilities Information Management System

mission performance. Project information is entered in PARS starting upon approval of mission need and continues until the project is completed. PARS contains basic project descriptions and points of contact, budget information, major milestone dates, and monthly performance information including summary-level Earned Value Management data. The information contained in PARS is used to support the development of monthly project status reports to senior leadership within the Department.

ENERGY MANAGEMENT SYSTEM 4 (EMS4)

EMS4 is the DOE corporate system for collecting energy information from the sites. EMS4 is a web-based system that collects energy consumption and cost information for all energy sources used at each DOE site. Information is entered into EMS4 by the site and reviewed at Headquarters for accuracy. EMS4 allows DOE to report progress towards our energy reduction goals, our reductions in greenhouse gases, and our purchases or use of renewable energy. EMS4 is the system that is used by DOE to provide information to Congress as part of DOE's Annual Energy Management Report.

PERFORMANCE MEASURES

At the Departmental level, DOE has established corporate-level measures to gauge the overall efficiency and effectiveness of the facility asset manage-

ment process. Lower-level measures are required to be developed for use at the program or site level as a tool to gauge the effectiveness of site-level operations. The corporate-level measures are discussed below. These measures were developed in advance of the Federal Real Property Council guidance. They will be reviewed for alignment with the Federal Real Property Council guidance and adjusted as appropriate.

Asset Condition Index (ACI). The Department currently uses the Asset Condition Index to assess asset condition. It is a facility portfolio metric reflecting the outcomes of real property maintenance and recapitalization policy, planning, and resource decisions. The index is 1.00 minus the Facility Condition Index (FCI) where FCI is the ratio of Deferred Maintenance to Replacement Plant Value which directly corresponds to the FCI as recommended by the FRPC¹.

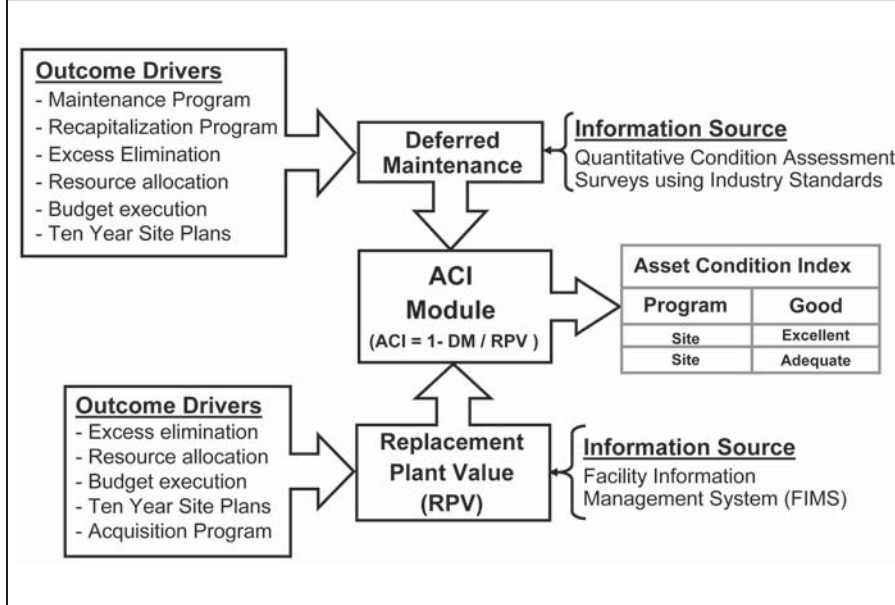
The ACI formula is:

$$\text{ACI} = 1.00 - \text{FCI}$$

Ratings are assigned to ACI range measures. As the ACI increases and approaches 1.00, the overall condition of facilities improves. This is equivalent to the Condition Index as recommended by the FRPC, but for consistency of reporting with other DOE measures, the ACI is expressed as a decimal value. Figure 9 illustrates how the ACI is derived.

¹ Rush, Sean C. et al. *Managing the Facilities Portfolio – A Practical Approach to Institutional Facility Renewal and Deferred Maintenance*. National Association of College and University Business Officers, 1991.

FIGURE 9. DOE ASSET CONDITION INDEX



The values for deferred maintenance are derived from the periodic inspection of real property assets. DOE Order 430.1B requires each asset 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 results of the condition assessments must be reported in the Facilities Information Management System.

DOE is committed to improving the overall condition of its real property portfolio against established benchmarks as a long-term goal. Universities and colleges use a benchmark of an Asset Condition Index of 0.95. The Department will use this benchmark as an initial target, adjusting it over time

to account for the unique facilities in the Department’s portfolio.

Asset Utilization Index (AUI). The Department currently uses the Asset Utilization Index to assess facilities and land holdings utilization. The AUI is derived from data in the Facilities Information Management System obtained from annual utilization surveys.

The AUI formula is:

$$AUI = \frac{\text{Utilization justified assets}}{\text{Current property assets}}$$

This is similar to the Facility Utilization Index as recommended by the FRPC but with different numerical classification of utilization levels to reflect the Department’s utilization objectives.

The AUI improves as excess facilities are eliminated and consolidations increase the space utilization of the remaining facilities. Figure 10 shows how the AUI is derived.

Targets for portfolio asset utilization will be developed taking into account Federal Real Property Council guidance and Departmental priorities.

Operating Cost. Annual operating and maintenance cost as defined by the FRPC consists of recurring maintenance and repair costs, utilities, cleaning and janitorial costs, and roads and grounds maintenance costs. Recurring maintenance and repair cost is reported in the Facilities Information Management System at the constructed asset level for buildings, trailers, and other structures and facilities. Energy consumption data is collected at the site level. Facilities services cost is collected

at the site level but is not currently segregated from other operating costs. During FY 2005, the Department will implement procedures to segregate these costs so that data reporting can begin in accordance with FRPC guidelines in FY 2006. The Department will report actual costs at the constructed asset level where available and allocate site level costs to the constructed asset level where actual asset-level costs are not available. Collection of this data will enable DOE to look across its portfolio to assess the efficiency and effectiveness of facilities operations and identify opportunities to reduce operating costs.

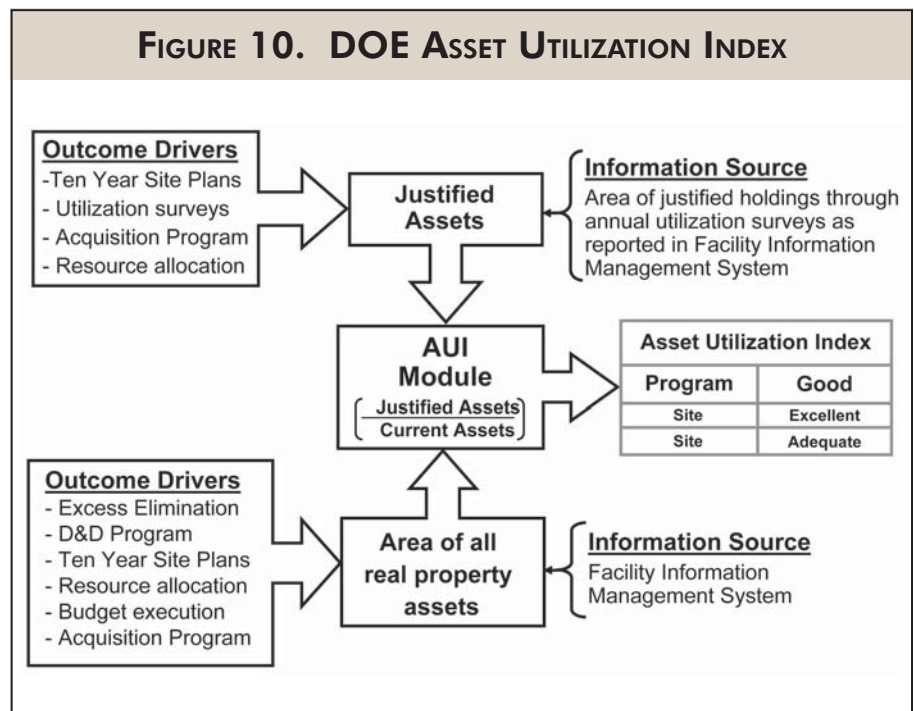
Mission Dependency. DOE Order 430.1B requires each site to evaluate the relative importance and contributions of all real property assets to mission accomplishment. The mission essential determination will be based upon program assigned mission requirements. Mission essentiality of assets will be designated in the Facilities Information Management System allowing the reporting of mission dependency in accordance with FRPC guidance. By the fourth quarter of FY 2005, the Department will complete population of mission essential data fields to allow reporting to begin in FY 2006.

Project Performance Management Using Earned Value. All capital asset acquisition projects with a cost of more than \$20 million are required to measure and report monthly performance using an Earned Value Management (EVM) methodology. EVM is a program and project management methodology for which organization,

planning, tracking, management control, and communication are essential elements. Earned value is the budgeted value of work actually accomplished and represents actual value of work accomplished. When compared to the planned (scheduled) work and to the actual cost of that work, performance and progress can be determined. The qualities and operating characteristics of earned value management systems are described in ANSI/EIA Standard 748-1998, *Earned Value Management Systems*. The goal for capital asset project performance is 90 percent of measured projects achieve cost and schedule objectives. This goal is based on the Federal Acquisition Streamlining Act of 1994 (FASA). FASA Section 313(a) states: "It is the policy of Congress that the head of each executive agency should achieve, on average, 90 percent of the cost and schedule goals established for major and non-major acquisition programs of the agency without



FIGURE 10. DOE ASSET UTILIZATION INDEX



reducing the performance of capabilities of the items being acquired.”

Elimination of Excess Facilities.

Beginning in FY 2003, the Department has been required to offset construction of new facilities through the elimination of equivalent excess facilities. Data is identified in the Ten Year Site Plans for each site and collected and consolidated by OECM. Each year as part of the Congressional budget, DOE submits a report detailing square footage of facilities constructed and facilities eliminated or projected to be eliminated by sale, transfer, or demolition. The total area eliminated in FY 2003 was 731,234 SF. The total eliminated in FY 2004 was 2,518,283 SF. Data for FY 2005 will be reported when available. The Department currently does not have a separate initiative for the elimination of excess at non-closure sites. However, all new or replacement construction is required to be offset by demolition of excess, equal to the amount of new square footage constructed.

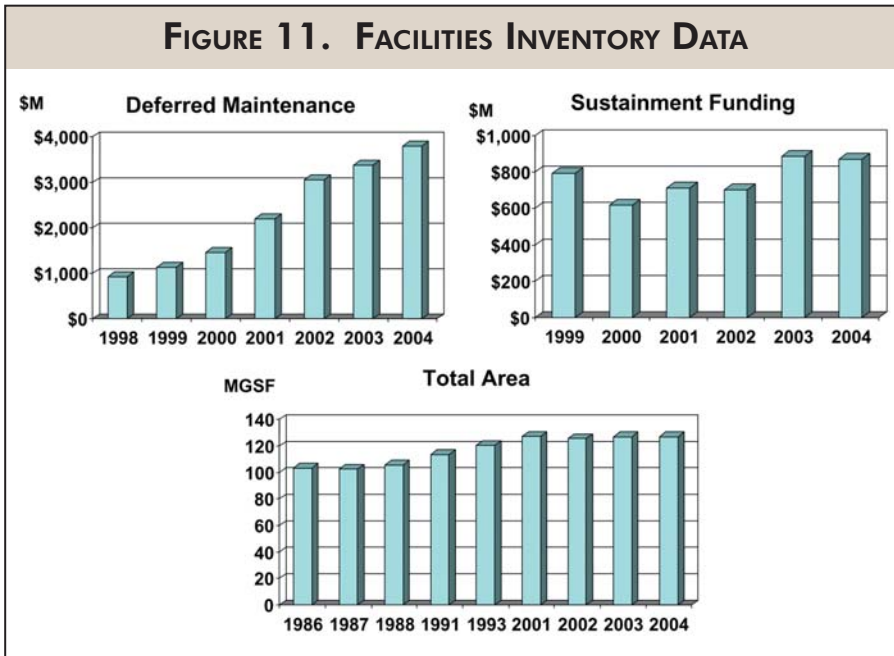
Reduction of Energy Consumption.

Energy consumption represents a significant portion of facilities’ operating costs. The Department has established an implementation plan for energy conservation and realization of the goals contained in E.O. 13123, *Greening the Government Through Efficient Energy Management*. The Department collects and monitors energy usage data on all facilities annually to track progress against energy reduction goals. The lack of meters for individual buildings imposes a constraint on the level of detail available. Only the high consump-

tion process facilities are separately metered and therefore energy consumption data is collected on a site-wide basis, broken out between process and non-process facilities without a further subdivision by facility type. The Department has exceeded the goal of a 35 percent reduction in building energy consumption per square foot from the 1985 baseline, achieving a 51 percent reduction for FY 2004, and has established an annual goal of an additional one percent year-to-year reduction.

PROGRESS AND TRENDS

The Department tracks key performance indicators over time to gauge the effectiveness of facilities asset management. Summary level facilities inventory data is shown in Figure 11.

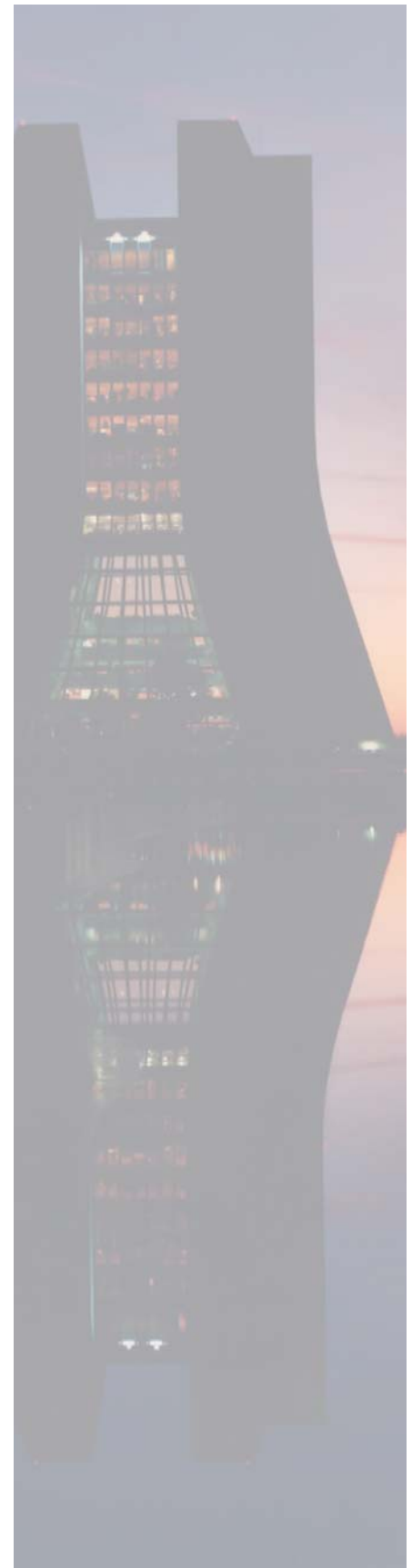


While the total size of our facilities inventory is growing, the trend has flattened since 2001 due in large part to the Congressional requirement to offset new construction with the elimination of excess. At the same time, sustainment funding has increased, bringing facilities funding at the Department more in line with industry standard to prevent further deterioration to the facilities portfolio. The trend for reported value of deferred maintenance is increasing, however this is due in part to increased focus on data collection and reporting.

The Department has made significant improvement in project management. For projects valued at \$5 million and above, OECM prepares a monthly

performance report that tracks the project portfolio against planned cost and schedule. Summary data is shown in Figure 12. In December 2002, approximately 78 percent of the project portfolio achieved a green rating. This has improved to approximately 89 percent for March 2005.

The Department has led other Federal agencies in the reduction of energy usage. For FY 2004, DOE has achieved a 51 percent reduction in energy consumption from 1985 levels, surpassing the E.O. 13123 goal of a 35 percent reduction by 2010. This reduction in energy consumption is saving over \$100 million annually. Figure 13 shows the Department's annual performance in meeting its goals.



This plan represents a major step forward in the management of DOE’s real property assets. For the first time, the Department is addressing its facilities and property from a corporate-wide

perspective and beginning to formalize the systematic linking of the Department’s mission and strategic goals to the construction, utilization, maintenance, and disposition of its critical corporate facilities and assets. Being the first of its kind, this plan is just a start in the management process. As each of the Department’s field sites develop their Ten Year Site Plans, this management plan will become more comprehensive as well as more specific. Goals, strategies, and performance measures will become better defined and better linked to program plans. Accountability and responsibility will improve as staff are trained and become more experienced in responding to the requirements of real property asset management policies and orders. While this plan is intended to provide management guidance and direction, only the willingness of DOE’s Federal and contractor managers and employees to embrace the intent and spirit of its principles will lead to the quality of facilities and assets necessary for DOE to be successful and deliver the results the American public deserves.

FIGURE 12. CAPITAL ASSET PROJECTS PERFORMANCE SUMMARY

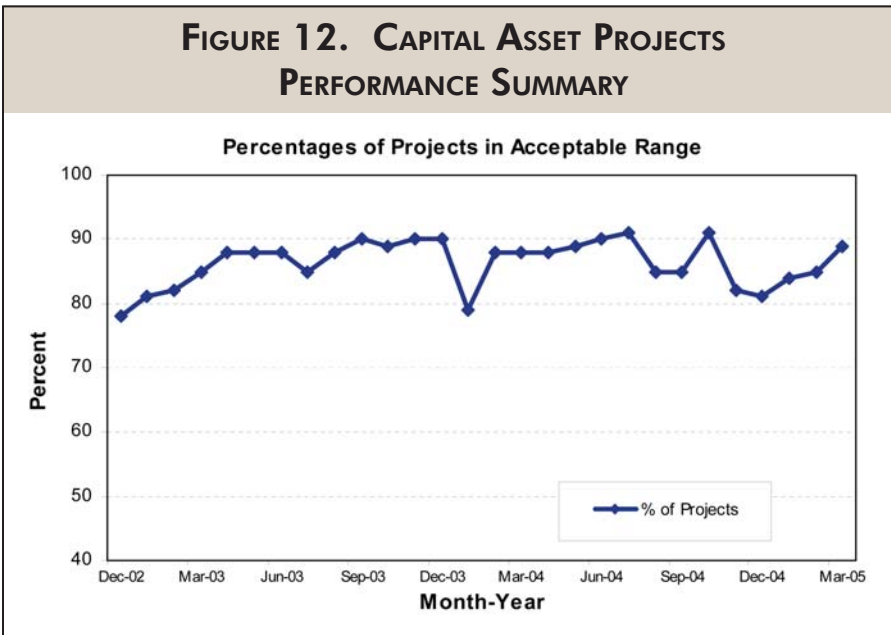
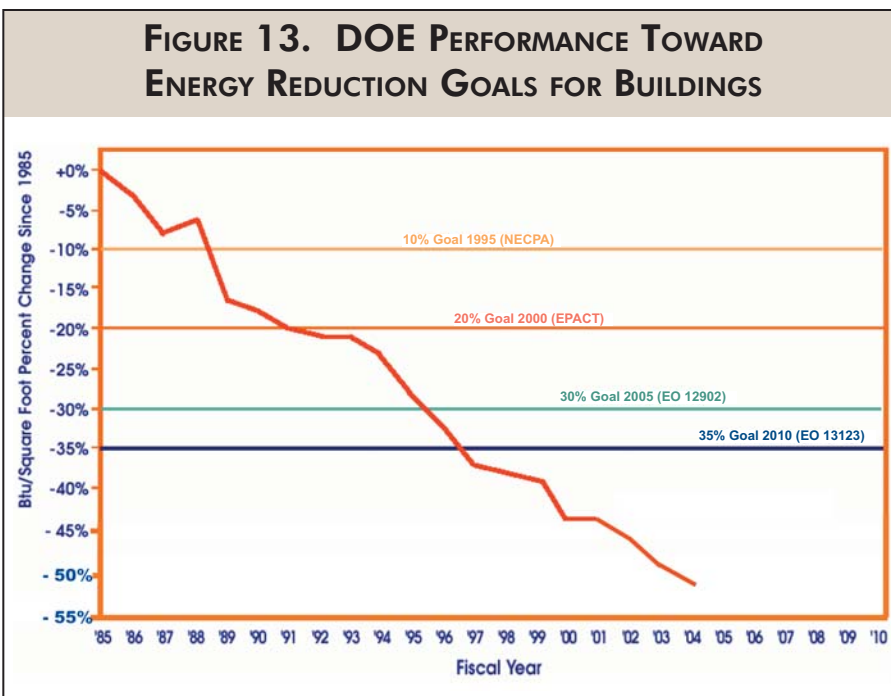


FIGURE 13. DOE PERFORMANCE TOWARD ENERGY REDUCTION GOALS FOR BUILDINGS





Office of Engineering and Construction Management
Office of Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585