



Real Property Human Capital Management Plan



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Office for Facilities Management and Policy
Office of the Assistant Secretary for Administration and Management

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Real Property Human Capital Management Plan

Executive Summary

The U.S. Department of Health and Human Services (HHS) and its Operating Divisions (OPDIVs) are responsible for managing a real property portfolio consisting of 3,828 constructed assets in over 46 million square feet, housing over 67,000 personnel. A typical OPDIV facility management workforce consists of highly skilled and trained personnel. The HHS Office for Facilities Management and Policy (OFMP) provides Department-wide leadership and direction in HHS facilities management. OFMP provides technical assistance to HHS OPDIVs in evaluating the effectiveness of their facilities programs and fosters creativity and innovation in the administration of these functions.

The Department's Facilities Management Program fulfills the needs of its customers by providing, operating, and maintaining facilities that meet or exceed their requirements. HHS's facilities personnel provide state-of-the-art biomedical research facilities for scientists and investigators and provide office and support space for administrators, actuaries, accountants and support staff who administer the nation's health programs. We provide state-of-the-art healthcare facilities for patients, physicians, nurses and healthcare professionals that provide comprehensive health services for Native Americans. And for our¹ external customers the taxpayers, the Congress, and Office of Management and Budget (OMB), we must be good stewards of the Federal real property that is entrusted to us. We must be responsive to executive and legislative mandates, particularly E.O. 13327, the President's Management Agenda (PMA) Federal Real Property Council's (FRPC) Measures and HHS Program and Management Objectives.

The HHS Real Property Human Capital Management Plan is a Departmental level document that covers appropriate Departmental activities such as: cross OPDIV assignments, core competencies, critical skills, continuous learning, and retention. This document is not an OPDIV level guide for all Real Property Human Resources related matters.

HHS, along with other Federal agencies and many public and private sector organizations, faces substantial human capital challenges specific to hiring and retaining a quality workforce. Internal factors with major impact include budgetary cuts, downsizing, and competitive sourcing. External influences include advancements in technology and evolving national priorities reflected in legislated requirements. Each OPDIV's facilities program is organized to meet their particular need and this plan provides guidance on how the OPDIVs may align their workforces with the functional areas and help identify gaps and critical vacancies. HHS has already developed leadership and basic core competencies; therefore this plan will focus on professional technical skill and special competencies that are required to successfully manage the Department's real property portfolio. This plan also provides guidance on: workforce plans, succession planning, and acquiring and maintaining a qualified workforce.

Our operating and staff divisions have developed high-level succession workforce plans and identified human capital needs as well as any gaps between current employment and future needs in mission critical positions. The OPDIVs should develop real property succession workforce plans to provide a map for assessing future human capital needs for real property management, tied to the strategic mission and direction of the OPDIV. The Department continues to employ and expand the use of flexible employment authorities. One example is our highly successful Emerging Leaders Program, which brings the best and brightest recent graduates to work for HHS. HHS encourages facilities personnel to participate in this program. The program has a retention rate of approximately 95%. Another is our SES Candidate Development Program, tailored to meet the leadership development needs of each participant. Both of these programs provide a needed resource option to backfill an ever-growing number of employees who retire or pursue other interests outside of HHS.

¹ Our or we means HHS/OPDIV real property personnel

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Introduction

HHS and its OPDIVs are responsible for managing a real property portfolio consisting of 3,828 constructed assets in over 46 million square feet, housing over 67,000 personnel. A typical OPDIV facility management workforce may consist of highly skilled and trained personnel such as: architects, boiler operators, budget analysts, building managers, contracting officers and specialists, construction managers, cost estimators, crafts persons, engineers, environmentalists, grounds personnel, industrial hygienists, interior designers, landscape architects, maintenance workers, planners, plant operators, safety and health professionals, program managers, project officers, realty specialists, and space planners.

Challenges include increased square footage, decreased funding, workload expansion around the President's Management Agenda (PMA); Environmental Management, New Energy Act and Transportation Scorecard requirements; Construction program accountability, increased health mission causing a need to modernize and expand bio-defense, American Indian (AI) and Alaska Native (AN) population growth, pandemic flu, etc.

This plan directly supports objectives contained in the PMA, the Federal Real Property Council (FRPC) "Guidance for Improved Asset Management", and HHS's department-wide management goals and objectives. All three of these include human capital management as an area requiring emphasis and are significant drivers of this planning effort. The strategic focus of this plan is on workforce skills and competencies, succession planning and employee retention rather than workforce size. It is intended to supplement and complement -

- The HHS Strategic Human Capital Management Plan, which provides a human capital strategy that guides HHS in managing its workforce to achieve Department strategic goals,
- The HHS Real Property Asset Management Plan (RAMP) which provides a high-level roadmap to promote efficient and economical use of the federal real property resources required to support the Department's missions and strategic goals, and
- The HHS Facilities Program Manual, which provides overall Departmental policy and guidance to HHS personnel responsible for directing and managing HHS facility activities.

To successfully manage our human capital, we must address the six standards for success in Human Capital Management (developed by OPM, OMB, and GAO). The six Standards bring together areas of concentration addressed by high-performing organizations and have been fully integrated into the Human Capital Assessment and Accountability Framework (Scorecards). They are: 1) Strategic Alignment, 2) Workforce Planning and Deployment, 3) Leadership and Knowledge Management, 4) Performance Culture, 5) Ability, and 6) Accountability.

Strategic Alignment and Accountability are focus areas of the RAMP, the Facilities Program Manual, and individual performance and development plans. All of the standards referenced above are covered in varying degrees and from different perspectives in the HHS Strategic Management of Human Capital Plan as well as in this complementary document.

Background

Department of Health and Human Services

The Department of Health and Human Services is the United States government's principal agency for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves. The Department includes more than 300 programs, covering a wide spectrum of activities that includes: health and social science research; preventing disease, including immunization services; assuring food and drug safety; Medicare (health insurance for elderly and disabled Americans) and Medicaid (health insurance for low-income people); health information technology; financial assistance and services for low-income families; improving maternal and infant health; Head Start

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(pre-school education and services); faith-based and community initiatives; preventing child abuse and domestic violence; substance abuse treatment and prevention; services for older Americans, including home-delivered meals; comprehensive health services for Native Americans; and medical preparedness for emergencies, including potential terrorism.

The HHS Office of Facilities Management and Policy (OFMP) provides Department-wide leadership and direction in master planning; facilities design, construction, leasing, operations and maintenance, space utilization; and management programs (environmental management, historic preservation, occupational health and safety, and energy management) for approximately 3,828 facilities. OFMP provides technical assistance to HHS OPDIVs in evaluating the effectiveness of their facilities programs and policies and fosters creativity and innovation in the administration of these functions. OFMP's vision is that HHS facilities and management programs are delivered at peak effectiveness and through leadership, oversight, policy guidance, and training OFMP leads the Department to provide the best value to the taxpayer within its functional areas.

HHS Facilities Management Customers and Services

Customers are the focus of everything we do. Our ultimate customers are the taxpayers of America, who depend upon HHS and entrust us with the stewardship of an extensive portfolio of Federal Real Property Assets. In order for the HHS Facilities Management Program to support the Department's Mission we must provide our internal customers real property assets that will support and enhance their work environment. The HHS Real Property Asset Management Program will satisfy the needs of its customers first by meeting the goals and objectives (mission) of HHS and its OPDIVs. The HHS Real Property Asset Management personnel will work closely with their customers to make sure that they are satisfied.

- For scientists and investigators who are conducting health and social science research; preventing and curing diseases; and assuring food and drug safety, we must provide state-of-the-art biomedical research facilities.
- For the administrators, actuaries, accountants and support staff who are administering Medicare and Medicaid; health information technology; financial assistance and services for low-income families; improving maternal and infant health; Head Start; faith-based and community initiatives; preventing child abuse and domestic violence; substance abuse treatment and prevention; and services for older Americans, we must provide adequate office and support space.
- For the patients, physicians, nurses and healthcare professionals who provide comprehensive health services for Native Americans, we must provide state-of-the-art healthcare facilities.
- For our external customers, the taxpayers, the Congress and OMB we must be good stewards of the Federal real property that is entrusted to us.

The HHS Real Property Management Program plays a vital role in supporting the mission. HHS provides professional, technical and skill services for the development, operation, maintenance, alteration, and improvement of HHS facilities. The facilities programs are responsible for operating and maintaining research, healthcare, and support facilities throughout the nation. This includes a sophisticated infrastructure that consists of complex central plant equipment and massive underground utility distribution systems. HHS and its OPDIVs provide national leadership in biomedical research and healthcare facility design and operations and thus impact the conduct of biomedical research and healthcare at medical centers throughout the United States.

Executive and legislative mandates must be managed and addressed as described in the HHS Strategic Human Capital Management Plan. Areas of particular impact to evolving legislation in Federal Real Property Management include: A-76, commercial activities studies, privatization initiatives, historic preservation, environmental, physical security, energy management, occupational safety and health, sustainable facilities, value engineering, and earned value management. Areas of evolving executive mandates that Real Property Management must address are: E.O 13327, FRPC Measures and HHS Program and Management Objectives.

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HHS Real Property Management Workforce Planning Strategies

The HHS Real Property Management workforce includes approximately 2,000 employees, contractors and/or tribal personnel who work closely with internal customers and state, local and tribal governments to provide necessary facility support services. HHS employs engineers, architects, planners, real estate professionals, leasing specialists, business professionals, accountants, occupational health and safety and other management professionals to manage information, provide long range facility planning, develop and execute projects, perform economic and cost analysis, manage space utilization, develop budgets, manage environmental/energy/historic preservation programs, and many other integrally related functions.

Our goal is to achieve well-managed program results in an intelligent, cost-effective way. Consistent with the HHS Strategic Human Capital Management Plan, this plan –

- Asserts that there is a role in human capital management for everyone at all levels.
- Affirms that focus areas are to be included in cascaded performance plans for Real Property Management as a mechanism for employees to see their role in the accomplishment of the agency's mission.
- Integrates strategic workforce planning in efforts to describe the quantity, quality, and mix of talent needed in the future.
- Addresses issues related to acquiring, developing, motivating and sustaining the real property workforce as an integral part of the management process.
- Embraces HHS Core Values as integral to the work performed in support of the HHS mission.
- Relies on the overarching HHS plan to address organizational issues and competencies.
- Focuses on a strategy for going forward to address human capital needs specific to Real Property Management.

Workforce Trends

HHS, along with other Federal agencies and many public and private sector organizations, faces substantial human capital challenges specific to hiring and retaining a quality workforce. Internal factors with major impact include budgetary cuts, downsizing, and outsourcing. External influences include advancements in technology and evolving national priorities reflected in legislated requirements. The following are widely acknowledged trends that are symptomatic of the internal and external changes described:

- An aging workforce (consistent with general population trends and governmental downsizing/outsourcing);
- Significant loss of knowledge due to projected retirements, outsourcing, relocating to the private sector and other public agencies;
- Succession planning challenges;
- Intense competition for the best talent in smaller labor markets; and
- Workload imbalances for remaining skilled workers

Alignment of Workforce with Functional Areas

Functional areas necessary to ensure appropriate management of the Department's current and planned real property assets include: Facility Management Leadership and Administration; Facilities Planning; Facility Delivery; Facilities Engineering; Facility Operations and Maintenance; and Facility Programs and Regulatory Compliance (OPDIV Facility Policy and Design Guidelines may be included in this functional area.) These functional areas may not necessarily align with OPDIVs facility organizational structures or staffing patterns; however these functional areas are aligned with the life cycle of a facility that must be planned, delivered, operated, maintained and disposed.

Each OPDIV's facilities program is organized to meet their particular need and this plan provides guidance on how the OPDIV may align their workforce with the functional areas and help identify gaps and

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critical vacancies. The following is a list of positions that are suggested to staff the functional areas where applicable.²

1. Facilities Planning: Senior Architect Discipline Expert, Budget Officer, Budget Analyst, Senior Civil/Structural Engineer Discipline Expert, Senior Mechanical Engineer Discipline Expert, Senior Electrical Engineer Discipline Expert, Contracting Officer, Senior Environmental Engineer Discipline Expert, Environmental Engineer, Environmentalist, Senior Landscape Architect Discipline Expert, Master Planner, Planner and Transportation Planner or Engineer.
2. Facility Delivery: Architect, Civil/Structural Engineer, Construction Manager, Contracting Officer, Contract Specialist, Cost Estimator, Electrical Engineer, Environmental Engineer, Fire Protection Engineer, Interior Designer, Landscape Architect, Mechanical Engineer, Realty Contracting Officer, Realty Specialist, Program Manager and Project Officer.
3. Facility Operations and Maintenance: Building Manager, Facilities Management Specialists, Senior Facilities Technical Specialists, Facilities Technical Specialists, Chief Engineers, Shop Foreman, Carpenter/Dry Wall Mechanic, Electrician, Plumber, HVAC Mechanic, Pipe fitter, Welder, Sheet Metal Mechanic, Machinist, Painter, Elevator Mechanic, Multi-Craft, General Maintenance and Repair Worker, Grounds/Landscape Maintenance Worker, Mechanical Engineers, Electrical Engineers, General Engineers, Realty Contracting Officer, Realty Specialist, Water Treatment or Sewage Treatment Plant Operator, Space Planner, Energy and Water Conservation Expert, and Stationary Engineer or Boiler Operator.
4. Facility Programs and Regulatory Compliance: Senior Architect Discipline Expert, Senior Civil/Structural Engineer Discipline Expert, Senior Electrical Engineer Discipline Expert, Senior Environmental Engineer Discipline Expert, Environmentalist, Senior Fire Protection Engineer Discipline Expert, Senior Mechanical Engineer Discipline Expert Federal Preservation Officer/Coordinator, Architectural Historian, Historian, Archaeologist, Senior Interior Designer Discipline Expert, Senior Landscape Architect Discipline Expert, Master Planner, Industrial Hygienist, Safety and Health Professional and Senior or Certified Safety Professional.

Competencies

There are three types of competencies that need to be developed and are required to manage HHS's real property portfolio. They are:

- Basic Competencies
- Organizational (Leadership and Management);
- Professional/Technical/Skill and Special

The focus area for this plan and subsequent efforts is Professional/Technical/Skill and Special competencies that are integral to successful performance of Federal Real Property Management (see Appendix 1). Additionally, Appendix 2 a competency assessment tool is tailored to HHS and it is a workforce skills analysis tool that may be used in a variety of ways. The purpose of the assessment is to determine the skills and competencies that are vital to the accomplishment of an organization's mission, goals and objectives. This assessment should be seen as a starting point that may require some modification for a specific use.

Competencies are the knowledge, skills, abilities and personal attributes that translate into effective on-the-job performance. They describe what an employee knows, what they are capable of doing and how well they do it. Competencies are used to categorize the capabilities of an employee, identify the knowledge requirements of a job position, forecast the workforce requirements for a project, and stimulate in-

² All positions listed may not be applicable to every OPDIV. Position should be based each OPDIV's real property portfolio and infrastructure.

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teraction and sharing of knowledge across the organization. The competencies necessary for federal real property management and to ensure appropriate management of the Department's current and planned real property include:

1. Basic Competencies: Basic competencies are the knowledge, skills and abilities that all personnel should possess in order for HHS and its OPDIVS to have an effective facilities management program. Most real property management personnel will have these competencies through life experience and learning. Some competencies will have to be taught either through a formal classroom setting, orientation or on the job training. HHS and its OPDIVS are encouraged to enhance these competencies so that facilities personnel can be of greater value to the organization and the nation. HHS has identified basic competencies for all HHS personnel and this plan will identify additional basic competencies that are unique to real property personnel. HHS basic competencies can be found on <http://intranet.hhs.gov/owcd/compmodel.html>.
2. Leadership Competencies: Real property management leadership competencies are: knowledge, skills abilities that HHS facilities leaders and managers should have in order to effectively manage and direct HHS facilities resources. Most facilities management personnel will have these competencies through life experience and learning. Some competencies will have to be taught either through a formal classroom setting, orientation or on the job training. HHS and its OPDIVS are encouraged to enhance these competencies so that facilities personnel can be of greater value to the organization and the nation. HHS has also identified leadership competencies for all HHS supervisors, managers and executives and this plan will also identify additional basic competencies that are unique to real property personnel. HHS leadership competencies can be found on <http://intranet.hhs.gov/owcd/compmodel.html>.
3. Functional Professional, Technical, Skill, and Special Competencies: Functional Professional, Technical, Skill, and Special Competencies are the knowledge, skills and abilities that are necessary to effectively plan, deliver, operate and maintain HHS facilities. Personnel assigned to these functions are expected to possess these competencies in their area of expertise prior to their appointment. Continuing education in ones area of expertise is encouraged to maintain, enhance and up-to-date skills. (See Appendix 1 for definition of functional core competencies.) The following are the competencies that are required for functional areas:
 - Facility planning requires real property competencies in: budget management/formulation, environmental planning/NEPA, master planning, pre-project planning, strategic analysis, and/or program/project management.
 - Facility delivery requires real property competencies in: acquisition and contract management, acquisition planning, budgeting management, contract formation, contract management and performance assessment, cost estimating, pre-project planning, program/project management, quality assurance, risk management, security and program protection, sustainable design, and/or facilities engineering. Facilities engineering includes real property competencies in: architecture, civil/structural engineering, construction management, electrical engineering, environmental engineering, fire protection engineering, interior design, landscape architecture, and/or mechanical engineering.
 - Facility Operations and Maintenance requires competencies in automated management systems, environmental remediation, pollution and waste management, energy conservation, building management, CADD/drafting, crafts, energy management, HVAC operations, general maintenance and repair, grounds-landscape maintenance, plant operations, space management, stationary engineering and boiler operations, quality assurance, real property management, space management, reliability and maintainability assurance, program/project management, mechanical, electrical and general engineering and/or work control.

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- Facility Programs and Regulatory Compliance requires special competencies in: environmental planning and program management, historic resource management, program/project management, energy and water conservation, occupational health and safety and/or legal. Legal requires personnel to have a working knowledge of: appropriations, general law, contracts law, personnel/EEO law, energy management, environmental law, labor law, program/project management, and/or codes and standards. This functional area may include OPDIV facility policy and design guidelines.

Based on organizational knowledge of existing personnel capabilities and performance, OFMP perceives that the following workforce weaknesses having the most critical need to be addressed, partially through skills and competency enhancement: requirements in the areas of facility project management, program management, budget, pre-project planning and sustainable design. OPDIVs should assess the critical skills of its organization using assessments surveys such as Appendix 2.

Critical Skills

There are overarching critical skills necessary for any employee, including federal real property personnel, including:

- Acquisition and contract management skills including writing and managing contracts, negotiation, and managing budgets and schedules.
- Communication skills including coordination/liaison, conflict management, and cultivation of a broad network of relationships.
- Influence skills including mentoring, motivating, negotiation, and change management.
- Managerial skills including team building, delegating and political awareness (seeing the big picture).
- Problem solving skills including continually analyzing options and innovations, planning, and risk management.

HHS faces challenges of acquiring personnel who have the critical skills necessary to lead, plan, deliver, maintain and operate HHS healthcare, research, administrative, and support facilities. These challenges are:

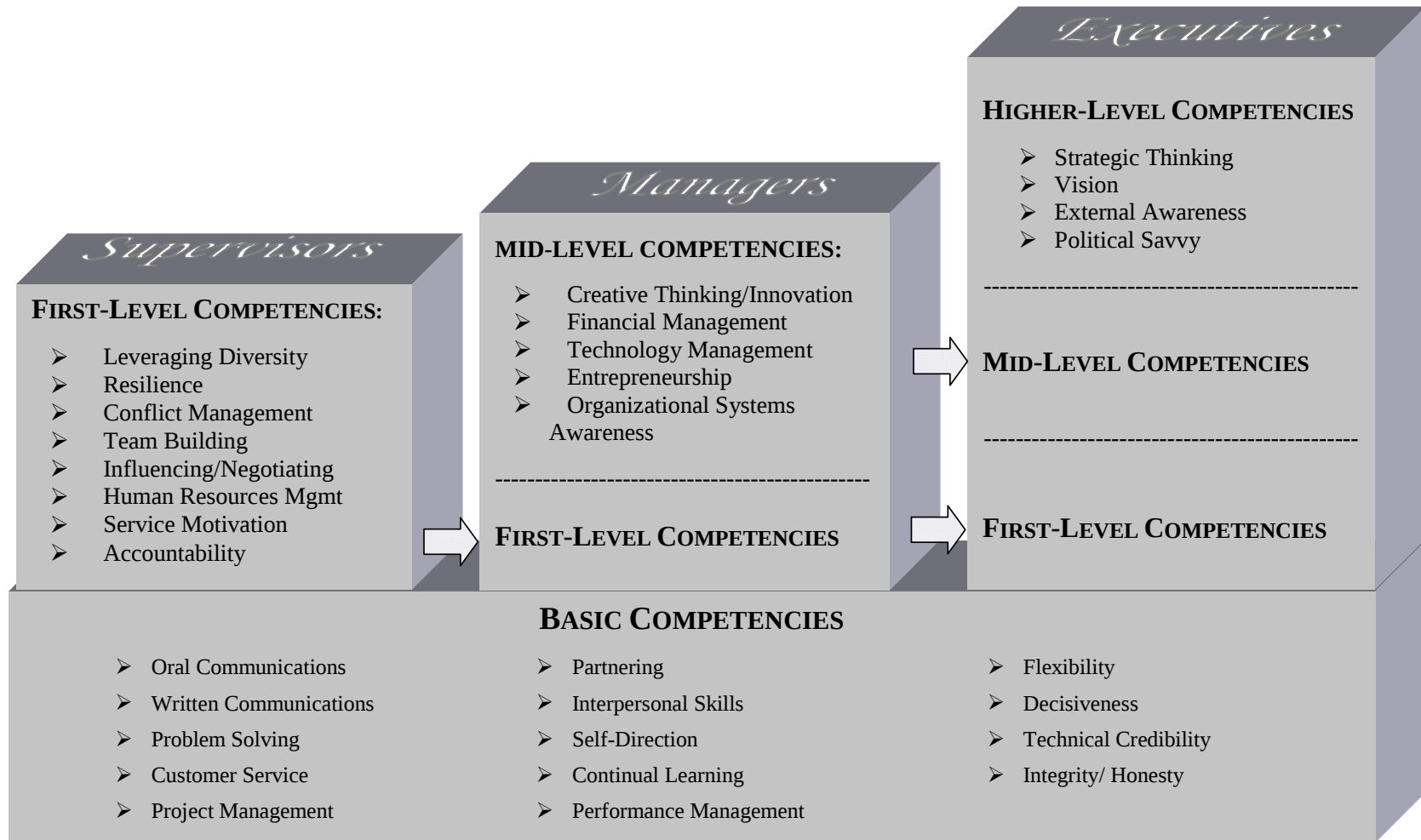
- Increased competition for technical skills.
- The need for a highly educated and professional work force.
- A shrinking science and engineering pipeline output.
- Lack of diversity in the applicant pool.
- Internal skills imbalances and lack of depth in critical competencies.

Qualifications

An educated and skilled workforce is an asset to HHS's Real Property Asset Management Program. HHS real property personnel are expected to have the necessary skills and education to function in their position. Education and certification is within the realm of private and state government institutions and it is the responsibility of the individual to obtain the necessary education and certification to fully function in their chosen occupation or profession. Therefore, this human capital plan will not propose to educate, train or certify HHS real property personnel but will identify the requirements for education and certification for critical functions within the HHS Real Property Asset Management Program such that the most qualified staff are hired. HHS encourages registration, licensing, and certification. See Appendix 3 for the requirements for education and certification for HHS real property positions.

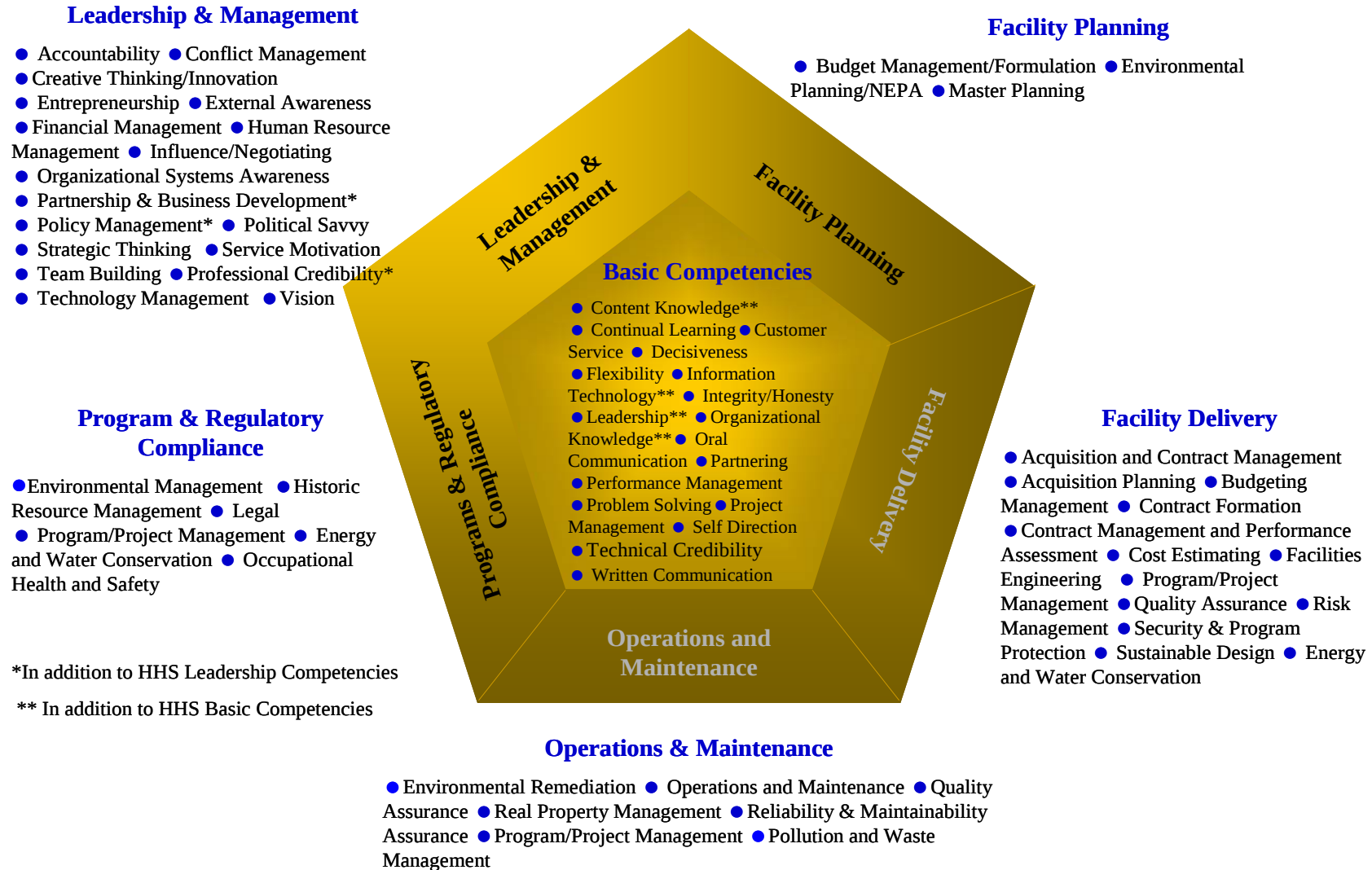
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DEPARTMENT OF HEALTH AND HUMAN SERVICES LEADERSHIP COMPETENCY FRAMEWORK



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HHS Facility Management Core Competencies Model



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1. Education: HHS's mission is vital to the healthcare of the nation. The facilities that house HHS programs and personnel must be safe, healthy, and serve their intended functions. Most of HHS's real property portfolio is state-of-the-art research and healthcare facilities with very sophisticated systems. To plan, deliver, operate, and maintain HHS facilities requires an educated and diverse workforce. Most positions require a college degree in their disciplines or their fields and others require vocational training in their occupation.
 - All design professional series (i.e. architects, planners and engineers) require a degree in architecture and engineering and most administrative series also require a degree.
 - Many general maintenance and repair workers learn their skills informally on the job. They start as helpers, watching and learning from skilled maintenance workers. Necessary skills can also be learned in high school shop classes and postsecondary trade or vocational schools. It generally takes from 1 to 4 years of on-the-job training or school, or a combination of both, to become fully qualified, depending on the skill level required. Graduation from high school is preferred for entry into this occupation.
 - There usually are no minimum educational requirements for entry-level positions in grounds maintenance, although a diploma is necessary for some jobs. Short-term on-the-job training generally is sufficient to teach new hires correct safety procedures and how to operate equipment such as mowers, trimmers, leaf blowers, and small tractors. Entry-level workers must be able to follow directions and learn proper planting and maintenance procedures for their localities. They also must learn how to repair the equipment they use. If driving is an essential part of a job, employers look for applicants with a valid driver's license, good driving record and some experience driving a truck. Employers also look for responsible, self-motivated individuals because grounds maintenance workers often work with little supervision.
2. Registration Certification and Licensing: Professional and occupational registration, certification and licensing for design professionals (architects and engineers) and skilled crafts or trades such as electricians, plumbers, and air conditioning/refrigeration mechanics are generally issued by state governments in concert with professional or trade organizations based on a written examination. Generally professional and occupational certification is based on protecting the life safety, health, and welfare of the community and candidates for certification must prove their proficiency and competency to practice in their profession or occupation. HHS encourages registration, certification or licensing of its real property workforce and will develop a Departmental policy on professional and occupational registration, certification, and licensing.

Continuous Learning (Training)

HHS recognizes the need to transform to a "learning organization" to avoid the mistakes of the past and most efficiently operate in an era of constrained resources by investing in the development of its future leaders, providing the information technology infrastructure to support a large percentage of knowledgeable workers, and competitively sourcing more work while maintaining a minimum work force with sufficient core competencies. Today's employees are self-developing free agents who want to continually learn. They want to acquire marketable skills, as well as attain advanced degrees/certificates to show for this learning

The Department has implemented the first phase of a Learning Management System that provides employees access to nearly 2000 free courses. These courses are available 24 hours each day, 7 days each week on the HHS Learning Portal. Employees can access the learning portal at <http://learning.hhs.gov/>. In addition to organizational and general professional development, we must identify, develop, maintain, and strengthen the real property professional's technical, skill, and special competencies, in addition to their knowledge management and leadership that will be required to provide effective service to the Department and Nation in the future.

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All organizations talk about “training”. While training will help update those with expertise, only an organization that is continually learning will attract and retain new employees. Learning has a variety of sources. Three main foci are strategy, operations, and the technical realm.

Strategic learning at the highest levels comes from continuous dialogue about values and goals with customers. Operational and technical learning comes from the process of designing and delivering products and services in dialogue with customers at the project level. Strategic and operational learning also comes from best practices. Best practices can be found inside or outside HHS. Training, on the other hand, is about individual competence. A learning organization understands the difference between individual competence and organizational competence, and connects them. Even the best training, however, does not make a learning organization. A cornerstone of HHS’s Real Property Management learning organization agenda is the Construction Industry Institute’s (CII) Technology Assisted Learning (TAL), which uses the Internet to deliver CII education modules. HHS is a member of CII and CII members can access the CII curriculum through the Internet and benefit from professionally developed and fully interactive web-based learning courses.

Some of the trademarks of the “Learning Organization” that we seek to practice and continually improve upon:

- Continually seek improvements and share lessons and best practices learning both individually and organizationally;
- Invest in people, technology and leadership development to foster adaptability, innovation, effectiveness and performance;
- Build and enhance Communities of Practice as the basis for our technical leadership; and
- Encourage continuing education.

Below are some of the expectations for leaders in order to transform an organization into a “learning organization”:

- Leaders must transform culture
- Unproductive bureaucracy should be reduced
- Empowerment should be increased
- Performance and learning should be measured at all levels
- Projects should include learning
- Meetings are forums for organizational learning
- Learning leaders should be recruited, promoted, and recognized
- Frontline learning is essential
- Training must be synchronized and updated with organizational learning
- Knowledge integration must transform information into wisdom
- Measurements of performance and learning drive decision-making

Recruitment and Retention

Ultimately, to be an employer of choice, the federal government (or individual agencies within it) must be perceived as paying fairly and treating their employees well. It is not enough to recognize that mechanisms already exist for achieving this. Federal facilities managers and supervisors must actually use the tools at their disposal. We will seek to use existing and new authorities in a targeted and effective manner, particularly in attracting new talent and building a more agile workforce. This requires knowledge and understanding of those authorities by our supervisory and managerial staff.

HHS has implemented strategies to ensure our ability to recruit and retain appropriately skilled employees. We were one of the first federal agencies to achieve and maintain “green” status in Human Capital on the President’s Management Agenda scorecard. The Department continues to employ and expand the use of flexible employment authorities. One example is our highly successful Emerging Leaders Program, which brings the best and brightest recent graduates to work for HHS. HHS encourages facilities personnel to participate in this program. The program has a retention rate of approximately 95%. Another is our SES Candidate Development Program, tailored to meet the leadership development needs of each participant. Both of these programs provide

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a needed resource option to backfill an ever-growing number of employees who retire or pursue other interests outside of HHS. People are HHS's most precious resource and they must be empowered and developed. Recruitment and retention of a well-qualified and competent real property management workforce is essential (whether the manpower is in-house or contract). Some of the proven strategies that can help with recruitment and retention include:

- Effective use of recognition systems and stress group awards;
- Tailored long-term development programs for each career field and grade level;
- Creation of career progression ladders for facilities staff;
- Continuous improvement in the quality of life;
- Making rotational assignments available to foster employee development;
- Mentoring and counseling to maximize career opportunities for all;
- Encouraging increased work productivity through partnerships and interaction with industry, universities, and professional societies;
- Establishing training programs, in concert with local universities, professional societies and local trade unions to help people get the job done;
- Creating an environment where workforce diversity is understood, valued and embraced, where there is an absence of bias, and where the vision is achieved through collaboration and teamwork;
- Demonstrating proactive leadership in workforce management through agreement and articulation of the vision, clear focus on the HHS and OPDIV missions, active participation, and achievement of results;
- A positive, productive and enjoyable work environment; and
- Helping people get the job done.

Succession Planning

The HHS Human Capital Strategy for Succession Planning is grounded on management principles intended to make HHS and its programs more responsive to the American people. The first of these principles is a firm commitment to building a management culture that stresses accountability, cross-OPDIV collaboration, and citizen-centered service. HHS believes that succession planning is a fundamental component in constructing an organization that is well positioned to achieve its strategic and tactical goals now and in the future. Succession planning is a key ingredient in the overall vision for the strategic human capital management initiative and ensures that highly qualified people are in key positions today, tomorrow and five years from now. It provides organizations the ability to align their business and strategic goals with their human capital needs. A sound succession plan establishes processes that identify, recruit, and develop persons for advancement into leadership roles.

Succession planning is critical to the future HHS's facilities management program. There are three areas that should be considered: knowledge, leadership and records management. It is important that knowledge be transferred to succeeding generations of HHS facilities managers, professionals, technicians, crafts-persons, and maintenance and operations personnel. HHS and its OPDIVS should prepare the next generation of facilities management leaders by leadership development assignments and training. It is very important to control and archive facilities records such as drawings and documents to illustrate the construction, maintenance and operational history of the facility or installation.

Initiatives

Rotational Departmental Development Assignments

OFMP has utilized workgroups consisting of subject matter experts to develop the HHS Facilities Program Manual and the Performance Measures in the HHS Real Property Asset Management Plan. HHS will continue to utilize rotational development assignments (RDAs) and cross-HHS teams to assist its staff in developing HHS real property policies and programs and to develop closer bonds with the OPDIVs facility program. Personnel who rotate into OFMP will learn about the overall budget process and how their OPDIV is involved in the process. They will get first hand experience in working with high-level policy makers and learn how facilities poli-

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cies are formulated from the White House and Congress to how these policies affect their day-to-day work activities. They will be on the ground floor of developing HHS facilities policies that help HHS fulfill its missions that are vital to the healthcare of the American people. The OPDIVs will benefit from employees with deeper understanding and appreciation for the HHS facilities program and how their OPDIV fits within the overall HHS and Federal facilities program. Rotational assignments are also encouraged between OPDIVs where OPDIVs exchange employees for a period of time. The detailees can learn best practices from their host OPDIV, which can then be introduced to their home OPDIVs for possible implementation. The individuals who participate in these rotational assignments will build a network of contacts within the HHS and Federal facilities communities that will be a benefit to all of HHS. OPDIV human and financial support will be critical to the success of this initiative. RDAs should be six months to one year in duration to adequately develop required knowledge, skills, and abilities. Some rotational assignments may be an opportunity for individuals who are successful to make a “career move” and move up in the system. Also OPDIVs need to commit to funding (i.e. per diem) assignments to other locations, such as IHS field staff coming to DC or NIH/FDA/IHS staff going to Atlanta.

Communities of Practice

Build and enhance Communities of Practice as a pillar for our technical leadership. Some HHS and OPDIV real property programs have nationally recognized best practices and expertise in the areas of planning, design, construction, operations, and maintenance of research facilities, health care facilities, etc, that can be utilized throughout HHS without requiring expertise or training from outside organizations. Professional societies or trade associations, such as the U.S. Green Building Council or trade unions, are communities of practice and HHS and its real property personnel can benefit from strong alliance with these organizations. Communities of Practice are knowledge and competency management tools that elevate the level of professional, technical, and skills competencies throughout HHS. Communities of Practice can be forums for continuing education and discussion to cross organizational lines, encourage consistent processes, share lessons learned, and interact on professional issues. This could include on-going web-based forums in addition to making opportunities for direct interaction.

Lead Centers of Learning

Lead Centers of Learning develop and provide mission essential training courses for HHS real property personnel such as: Real Property Management Overview, Performance Based Contracts, Reliability Centered Maintenance, and Sustainable Design. HHS will rely on in-house resources within the OPDIVs. An OPDIV may serve as a Lead Center of Learning because of its experience and expertise, develop course materials, “train the trainer” at other OPDIVs, and serve as an expert for all of HHS.

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Implementation

1. Identify critical real property competencies by 6/30/06.
2. Encourage registration of design professionals and licensing of crafts persons by enabling them to participate in intern development programs, registration seminars and apprenticeship programs. Candidates for licensure should be authorized liberal leave to sit for the exam. OPDIVs conduct inventory of licensing/certification status. OPDIVs review skills and identify gaps, licensing and certification needs. Result: Understand workforce status and competency gaps 9/30/06. OS develop licensing/certification strategy in consultation with OPDIVs. 9/30/06.
3. Develop course outline for HHS Facilities Program Management course and contractor SOW for course development and award course development task order 9/30/06 for the following seminars or courses: project management, budget, pre-project planning, sustainable design, operations and maintenance, facility project acquisition, EO 13327 and real property asset management.
4. Complete real property HR improvement implementation plan by 12/31/06. (Note: Plan will establish key date-certain milestones for FY 08-10.)
5. OPDIVs establish minimum technical, leadership and communications training requirements and objectives for RPM personnel. 12/31/06.
6. HHS Facilities Program Management course ready for first prototype course presentation. 12/31/06.
7. Form strategic alliances with organizations such as HHS University and OPDIV Workforce Development Organizations and determine Facilities Program Management course delivery strategy after prototyping is done. 12/31/06.
8. Investigate and consider opportunities to use “Communities of Practice” mechanisms as an employee development tool. Communities of Practices are knowledge and competency management tools that elevate the level of professional, technical and skills competencies throughout HHS. Develop Community of Practice forums for continuing education and discussion to cross organizational lines, encourage consistent processes, share lessons learned, interact on professional issues, ask questions and receive answers, etc. This could include on-going web-based forums in addition to making opportunities for direct interaction. 12/31/06.
9. Initiate cross-OPDIV developmental assignments for General Schedule personnel by 2Q07 (at least one individual). Deliverable: Evidence of cross-OPDIV/HHS developmental assignments.
10. HHS Facilities Program Management course first formal course presentation 6/30/07 and continue through to 6/30/09.
11. Develop and initiate implementation of a formal RAMP Employee Development & Management Cadre Program to support employee developmental opportunities and succession planning. Under the auspices of this program, institute a coordinated approach to all of the developmental initiatives (mentoring/coaching, training, rotational assignments, etc.) by 9/30/07.
12. Develop and conduct Facilities Program Management Course—train at least 60-70 management staff during FY 07 (3Q = 30 and 4Q = 30), 100 FY 08, 100 FY 09 (generally three training sessions per year after year one at 30-35 each).
13. Establish Lead Centers of Learning within the OPDIVs and HHS. Establish the first lead center by 6/1/07. Develop mission essential training courses. Real Property Management Overview, first offering by 12/31/07. Performance-based contracts. Reliability-Centered Maintenance. Sustainable Design.

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Appendix 1: HHS Real Property Management Competencies

The information that follows is compiled from several sources including NASA, GSA, the Department of Education, the Construction Industry Institute, professional societies, trade associations, and the U.S. Department of Labor Statistics. This is a sampling of worthwhile information and approaches with significant relevance to HHS's requirements for Real Property Management. They will be useful as references and resources for designing a tailored set of tools and procedures for assessment of HHS workforce competencies.

Purpose

Competency Management is a collection of business processes and tools used to measure and monitor the corporate knowledge base. Competencies are used to categorize the capabilities of an employee, identify the knowledge requirements of a job position, forecast the workforce requirements for a project, and stimulate interaction and sharing of knowledge across the organization.

Information

Strategic Human Capital Management: Competency management is implemented as a workforce-planning tool to help ensure an organization has the competencies needed for the future workforce. It identifies competencies for employees, job positions, and program/projects. By combining this data with other related information (such as project schedules, mission priorities, allocated resources, etc.), it provides insight into the organization's workforce capabilities, which enables appropriate decision makers to set guidelines for human capital programs (such as staffing, training, etc.). Program managers can use the competency information to augment other workforce information to align the workforce to the organization's mission.

Integration of Business Processes: Competency Management can provide a common frame of reference that allows business processes that are related, to map their objectives and data to competencies.

Employee Development: Competency Management provides an added avenue to help determine critical knowledge areas and provide focus for defining appropriate developmental activities to enhance employee capabilities.

Expertise Locator: Competency Management can provide the capability to locate expertise within the workforce - insight into the organization's corporate knowledge base.

Knowledge Management: Competency Management can help connect employees with similar competencies into communities of practice, allowing other tools, such as portals, to more easily connect the community with management tools (such as Lessons Learned, Technical Documents, etc.) that are related to the competency.

Communication Tool: Competency Management can provide a mechanism to understand the Agency's Corporate Knowledge Base that enables improved communication across project, functional, and organizational boundaries in an effort to realize and apply the full capability of the workforce to accomplish the mission by providing a consistent language and framework.

Job Selection: Competency Management is not designed or used as an employment and selection system. When defining a job, competencies can help define the knowledge requirements for the position. However, several other qualification factors (such as duties, skills, abilities, location, job environment, etc.) are defined and used during the competitive selection process.

Performance Evaluation: An employee's performance plan should be based on an employee's work assignments and responsibilities and should contain at least one element that addresses the individual's performance as it relates to the agency Strategic Plan. In addition, cascaded performance elements should be

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identified and addressed in the employee's performance plan. Competencies, as a body of knowledge, cannot be used to plan or evaluate employee performance.

Task/Work Assignments: Competency information can provide supervisors with limited information about what an employee may know. It does not capture or communicate the other items that a supervisor would need in order to assign an employee to a particular task or job, such as how the employee applied their knowledge (which projects, products, tasks), how the employee performs, other special skills or capabilities that an employee may possess, and availability of the employee, among others. Competency information is not intended to replace supervisor judgment or direct communication with employees.

This information does not supplement or supersede any HHS, or OPDIV, HR Policy or desk procedure. For any questions about competency information as it relates to personnel actions please contact the Human Resource Office.

Competency Principles

1. **The number of competencies per position:** The intent is to identify competencies that are required for a job position AND that would be utilized most of the time, or are critical knowledge areas for the position. It is not the intent to capture every possible competency that could be used. Every position has at least one competency requirement, and for most positions there are anywhere between 2 and 10 competencies needed.
2. **Primary Competency:** For every job position, one of the required competencies should be considered as a "primary" competency. It should be the one that best describes or represents the knowledge that is utilized the most over a given fiscal year. All competencies identified for a job position are considered of equal value. The primary competency can be used during the workforce planning process to simplify forecasting and data analysis.
3. **Identifying required competencies for specific position types:**

Senior Executive Service (SES) positions include "Executive Core Qualifications" as primary competencies. These competencies include: 1. Leading Change, 2. Leading People, 3. Results Driven, 4. Business Acumen, and 5. Building Coalitions/Communications. In addition, the required competencies include any other appropriate technical competencies that directly relate to the knowledge needed for the functional responsibilities of the position.

 - **Supervisory and Managerial** positions include one of the supervisory competency groups listed below as the primary competency. Other appropriate technical competencies may be added as additional knowledge requirements for the job position.
 - Project Work & Team Management
 - Technical Work & Team Management
 - Business Work & Team Management
 - Leadership
 - EEO
 - **Administrative Officers** should have Professional Administrative Operations as the primary competency and other competencies as secondary (e.g. Financial Management, Budgeting Management, Federal regulatory compliance, human resources, etc.).
 - **Clerical positions** should have Para-Professional Business Operations as the primary competency.
4. **Levels of Proficiency:** Proficiency is a measurement of an employee's demonstrated level of capability utilizing the associated body of knowledge. It categorizes the depth of knowledge within any single competency or sub-competency. Reference the "Proficiency Guideline Table."

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Listing of Competencies Descriptions for Real Property Management

Acquisition and Contract Management: Knowledge, capabilities, and practices associated with each phase of the acquisition and contract management lifecycle including requirement analysis, market research, acquisition planning and strategy, solicitation, proposal evaluation, negotiation, determination of price reasonableness, selection, contract management, and performance assessment. Requires understanding of applicable public laws, executive orders, Federal regulations, Agency requirements, policies, and initiatives. Requires knowledge of contracts to review products and services to determine if they are in compliance with contract terms and conditions. Includes ability to assess technical requirements needed to support program and project implementation and provide guidance and direction to contractors to ensure delivery and quality of services and products. Ability to use contract or acquisition instruments and surveillance systems as necessary to ensure contract or acquisition requirements are being met throughout the life of the contract.

Acquisition Planning: Knowledge of contract regulations and government contract vehicles, and ability to form contracts through source selection planning, identifying solicitation terms and conditions, and identifying and selecting techniques for determining price reasonableness. Also includes ability to recognize factors to be considered when evaluating and providing government financing, conducting price analyses, performing risk assessment, identifying actions to resolve protests, and awarding contracts.

Appropriations: Knowledge of appropriation law as it relates to construction. The congressional appropriation process and how it translates into project budgets. Knowledge of the use of operating funds verses construction funds. Knowledge of appropriation law as it relates to the limits on appropriated or earmarked funds.

Architecture: Knowledge of design and construction of buildings. Ability to analyze project requirements, creation and development of schematic building design, oversight of architectural drawings, specifications, and bidding requirements and general administration of the construction contract to ensure functional, safe, and economical buildings that suit the needs of the people who use them. Knowledge of: zoning ordinances; accessibility standards; building and life safety codes and standards. Ability to communicate design concepts and vision persuasively. Ability to conduct feasibility studies, selecting a site, or specifying the requirements the design must meet, such as: space requirements by researching the numbers and types of potential users of a building. Knowledge of sustainable design.

Budgeting Management: Knowledge of how to apply: management knowledge, principles and practices to obtain, utilize, and manage financial resources in the workplace to meet program, project, or business requirements. Involves maintaining available resources, making resource decisions based on need and availability, and developing and implementing strategies to make rational and well thought-out decisions related to organizational resources. Includes the ability to provide guidance, formulate a budget plan, defend a budget plan, assess budget performance, advocate budget and alternative scenarios, and execute a budget plan. Requires knowledge of policies and practices related to Federal, Agency and Installation accounting, and internal business information systems.

Building Management: Knowledge of janitorial, security, grounds keeping, trash removal, and other building services. Knowledge and ability to serve or manage as Project Officer of record for CFM, O&M, Janitorial and Grounds Maintenance service contracts, and repair contracts that relate to daily building operations. Ability to: monitor and oversee the performance of contractors and staff and investigate and resolve complaints from occupants when services are not properly provided. Knowledge of purchasing: supplies and equipment for the property and making arrangements with specialists for repairs that cannot be handled by regular property maintenance staff. Ability to be responsible for the day-to-day operations of a single building or complex. In older facilities, experience in asbestos abatement is required. Knowledge and ability to ensure that the property is safe, healthy and properly maintained,

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through routine inspection of the grounds, facilities, and equipment to determine whether repairs or maintenance is needed. Skilled in handling requests for repairs and resolving complaints. Knowledge in enforcing the terms and agreements of the building such as space utilization, parking and use of common areas. The ability to keep accurate and up-to-date records of income and expenditures of property operations and the ability to submit regular expense reports to upper management. Knowledge of the latest best practices in building operations as they evolve (e.g., RCM, PT&I, DDC, etc.).

Business Management: Knowledge of principles and practices related to managing the internal and external operations of a business unit to effectively accomplish mission objectives and goals, achieve customer satisfaction, develop strong relationships with other HHS external entities, and adhere to agency wide programs, policies, and procedures. The incumbent must have understanding of internal operations and processes, and the ability to support or modify processes in order to optimize efficiency and information for decision making.

CADD/Drafting: Ability to prepare technical drawings and plans for construction, space plans and as built drawings. The incumbent must have knowledge and skills in traditional drafting techniques. Ability to prepare plans manually and by CADD systems. Ability to employ computers to create and store drawings electronically that can then be viewed and printed.

Civil/Structural Engineering: Knowledge of design and supervision of construction of roads, buildings, airports, tunnels, dams, bridges, grading and drainage, and water supply and sewage systems. Civil engineering encompasses many specialties. The major specialties within civil engineering are structural, water resources, environmental, construction, transportation, and geotechnical engineering. Structural Engineers should have knowledge of foundation design and building construction consisting of concrete, steel, masonry and wood structural framing system design and construction. The incumbent should have the ability to analyze a project's civil/structural requirements; provide oversight of civil/structural drawings specifications and bidding requirements; and perform general administration. Also requires knowledge of construction contracting and contractor oversight and contracts management. The incumbent should have the knowledge and ability to apply structural building codes and standards to a project. Knowledge of sustainable design.

Content Knowledge: Ability to maintain and apply work-related content knowledge in field of expertise. Through continuous learning; Grasps the essence of new information; masters new technical and business knowledge; recognizes own strengths and weaknesses; pursues self-development; seeks feedback from others and opportunities to master new knowledge

Contract Formation: The knowledge of contract regulations and government contract vehicles, and ability to form contracts through source selection planning; identifying solicitation terms and conditions, and identifying and selecting techniques for determining price reasonableness. Also includes ability to recognize factors to be considered when evaluating and providing government financing, conducting price analyses, negotiating, identifying actions to resolve protests, and awarding contracts.

Contract Management and Performance Assessment: Knowledge and capabilities associated with managing contracts and evaluating a contractor's performance, including identifying and evaluating commercial and noncommercial financing arrangements, determining the appropriate actions necessary to ensure customer satisfaction, identifying and selecting the appropriate course of action for resolving a contractor dispute, and identifying and implementing contract close-out procedures.

Construction Management: Ability to plan and coordinate construction projects. Ability to schedule and coordinate all design and construction processes, including the selection, hiring, and oversight of specialty trade contractors. Ability to manage, coordinate, and supervise the construction process from the conceptual development stage through final construction on a timely and economical basis. Ability to

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coordinate and manage people, materials, and equipment; budgets, schedules, and contracts; and safety of employees and the general public. Ability to oversee the completion of all construction in accordance with the engineer's and architect's drawings and specifications and prevailing building codes. Ability to arrange for trade contractors to perform specialized craftwork or other specified construction work. Knowledge and ability to manage and coordinate several segments of construction included but not limited to: site preparation, including land clearing and earth moving; sewage systems; landscaping and road construction; building construction, including excavation and laying of foundations, as well as erection of structural framework, floors, walls, and roofs; and building systems, including fire-protection, electrical, plumbing, air-conditioning, and heating. Ability to work with engineers, architects, and others who are involved in the construction process. Knowledge and ability to evaluate and determine appropriate construction methods and the most cost-effective plan and schedule. Ability to divide all required construction site activities into logical steps, budgeting the time required to meet established deadlines. This may require sophisticated estimating and scheduling techniques and use of computers with specialized software.

Cost Estimating: Knowledge and practices associated with the determination, estimation, and analysis of costs associated with business functions, programs/projects, processes and/or tasks. Includes preparing, justifying and/or managing costs associated with initiatives to set priorities and track expenses in support of organizational objectives. It encompasses analytical techniques required to develop and assess estimates for hardware/software acquisition; design, integrate and test, production, operations, and support costs (e.g., life-cycle costs) of programs, projects, systems, and resources. Knowledge and skills required include Work Breakdown Structure (WBS) development, data collection, cost estimating relationship development and documentation, application of cost models, and evaluation of cost realism in proposals. Knowledge and ability to prepare and evaluate design services cost estimates for all design disciplines at the schematic, design development, contract document levels. Ability to estimate the cost of feasibility and special studies. Knowledge and ability to prepare and evaluate construction cost estimates at the following levels 1) Broad order of magnitude (square foot), 2) Systems, and 3) Quantity take off estimate.

Crafts and Trades: Most craft workers specialize in one kind of work, such as plumbing or carpentry. Crafts Persons are involved in many different kinds of construction and repair activities. They must have the skill in their trade to cut, fit, and assemble materials for the construction and repair of buildings and many other structures. Because local building codes often dictate where certain materials can be used, crafts persons must know these regulations in their specific trade. Craft Persons must have the ability to work from blueprints or instructions from supervisors. Crafts Persons must be proficient in the use of tools of their trades. They should have the ability to perform preventive maintenance. Crafts Persons must have the ability to inspect equipment and locate and correct problems before breakdowns occur. When breakdowns occur, they must have the ability to make the necessary repairs as quickly as possible in order to minimize inconvenience. In addition, journeyman craft workers should be trained in the latest best practices in building operations as they evolve (e.g., RCM, PT&I, DDC, etc.)

Electrical Engineering: Knowledge of planning, designing, developing, testing, or evaluating electrical components, electrical installations, and inspection for HHS facility programs. Knowledge of electrical codes and standards and testing of complex electrical or electronic systems including sources, loads, energy efficient technologies, power management and distribution, communications and controls. Ability to analyze a project's lighting and power requirements; oversight of electrical drawings; specifications, and bidding requirements; and general administration. Also requires knowledge of construction contracting, contractor oversight and contracts management. Knowledge of sustainable design.

Energy and Water Conservation: Ability to develop short and long term plans to meet the requirements of current executive orders, policies and laws. Ability to assess design and building plans to ensure the most effective energy conserving equipment is being considered.

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Environmental Engineering: Environmental engineers must be able develop solutions to environmental problems such as: compliance, air pollution control, recycling, remediation, waste disposal, and public health issues. Must have the ability to conduct environmental management studies to evaluate the significant risk and hazards and develop solutions/procedures to prevent mishaps and improve program management. They conduct research on proposed environmental projects, analyze scientific data, and perform quality control evaluations. Comprehensive knowledge of environmental protection practices to provide expert advice on environmental planning and program management.

Environmental Management: Uses knowledge of environmental engineering, environmental law, chemistry, biology, geology and hydrogeology to maintain a proactive stance regarding environmental stewardship, including protection and restoration of environmental resources such as ground water, surface water, soils, sediments, air, and natural, cultural and historic resources. Assesses compliance with Federal, State and local statutory and regulatory requirements such as Executive Orders and directives. Implements proactive programs such as recycling, pollution prevention, affirmative procurement and energy management, and remediation activities under RCRA and CERCLA requirements. Ability to implement, manage and maintain facilities-wide environmental management systems.

Environmental Planning/NEPA: Uses knowledge of environmental engineering, environmental law, economics and the physical sciences to fully consider the possible environmental effects, along with technical, economic, and other factors, in the earliest planning of proposed HHS Programs, Projects, and related activities. Implements the requirements of the National Environmental Policy Act (NEPA) including: developing and reviewing NEPA documentation including Environmental Assessments, Environmental Impact Statements, Findings of No Significant Impact, and Records of Decision. Ability to coordinate public meetings and to solicit input on major Agency actions.

Environmental Remediation: Uses knowledge of environmental engineering, chemistry, biology, geology and hydrogeology to identify, investigate, and cleanup contaminated sites in compliance with Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements. Performs remediation contract management duties including evaluation of contractor performance and financial and schedule planning and tracking. The ability to negotiate agreements with: Federal, State, and local regulators. The ability to manage the schedule of scientific/engineering, contractual, management, and informational documents including preparation of Records of Decisions (RODs), administrative orders, and consent decrees.

Facilities Engineering: Knowledge of facilities engineering, facility evaluation, cost, schedules and formulation of performance requirements and alternative analysis/scenarios for key facilities. General knowledge of: architectural, civil/structural, mechanical and electrical engineering disciplines. Knowledge of project management and control including life-cycle costs, engineering economics, and project planning and evaluation of scope, cost and schedule. It also includes program controls such as earned value management or other measures for facility project controls. Also requires knowledge of construction contracting, contractor oversight and contracts management. The knowledge of sustainable design and energy and water conservation.

Facilities Operations: Knowledge of operation and maintenance of buildings installations and associated infrastructure, systems and equipment as they relate to office, research and development, healthcare, and support facilities. Ability to operate facilities in compliance with environmental laws and regulations. Examples include knowledge required to develop and manage a comprehensive program of facilities management services, such as test planning and development, commissioning, asbestos abatement (in older facilities) development of operational plans and procedures, data acquisition and analysis, test scheduling, resource planning, historic preservation, development of facility capability enhancements, reliability centered maintenance, preventive maintenance, energy conservation, system health monitoring, minor facility modification and repair, etc., and to operate, sustain, and optimize facilities and equipment.

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Includes the ability to effectively integrate these services and be consistent with the strategies and program goals of the organization. Knowledge of the latest best practices in building operations as they evolve (e.g., RCM, PT&I, DDC, etc.).

Biocontainment Facility Operation and Maintenance: Specialized knowledge and ability in the operation and maintenance of Biosafety Level 3 and 4 facilities. Knowledge of the safety and security requirements and protocols used in the operation and maintenance of these facilities.

Facilities Planning: Knowledge of strategic and long-term planning for facilities required to support business operations and current and future program needs. Understanding of how to design facilities to provide a suitable environment, including: workspace planning, communication infrastructure, energy and water conservation techniques, and public spaces. Devise and implement policies and procedures regarding safety and fire prevention, emergency preparedness, property parking, and records space planning. Effectively integrate facilities management services, including the latest best practices in building operations as they evolve (e.g., RCM, PT&I, DDC, etc.), commissioning, general maintenance and repair, within the broad objectives, strategies, and program goals of the organization and knowledge of sustainable design.

Fire Protection Engineering: Knowledge, capabilities and practices associated with fire prevention-related tools and their application to systems for minimizing the occurrence or effects of fire. The incumbent maintains comprehensive knowledge of applicable NFPA, OSHA, HHS, and fire prevention industry trends, standards and policies for fire prevention. Demonstrate a comprehensive knowledge of and contributes to resources available in the fire prevention community including HHS, government, and industry. Should have capability to review and assess complex technical documents for their impact on fire prevention work. Maintain a comprehensive knowledge of Life Safety Systems. The incumbent should have capability to provide mitigation strategies for fire protection when requirements cannot be met.

General Maintenance and Repair: General maintenance and repair workers should have skills in many different crafts. They should have the knowledge and ability to repair and maintain mechanical equipment, and buildings and repair plumbing, electrical, and air-conditioning and heating systems. In older facilities, they should have a general awareness of asbestos and asbestos abatement procedures. They should have the ability to build partitions, make plaster or drywall repairs, and fix or paint roofs, windows, doors, floors, woodwork, and other parts of building structures. They also should have the knowledge and ability to maintain and repair specialized equipment and machinery found in cafeterias, laundries, clinics, hospitals, stores, offices, and laboratories. General maintenance and repair workers should have knowledge and ability to troubleshoot and fix faulty electrical switches, repair fan motors, and unclog drains. They should have basic computer skills to complete service calls and other maintenance work orders. General maintenance and repair workers should have the ability and knowledge to inspect and diagnose problems and determine the best way to correct them. They should have the ability to read and understand blueprints, repair manuals, and parts catalogs. They must be skilled in using common hand and power tools such as screwdrivers, saws, drills, wrenches, and hammers, as well as specialized equipment and electronic testing devices. General maintenance and repair workers should have the ability to perform routine preventive maintenance and ensure that equipment continues to run smoothly, building systems operate efficiently, and the physical condition of buildings does not deteriorate. Maintenance and repair workers must have the ability to keep records of their work. In addition, general maintenance and repair workers should be trained in the latest best practices in building operations as they evolve (e.g., RCM, PT&I, DDC, etc.) Supervisors of general maintenance and repair workers perform various functions. They should have knowledge and ability to prepare cost estimates, schedule work for crews on the basis of on site conditions or the availability of equipment, and perform spot checks to ensure the quality of the service. Ability to train workers in their tasks; keep employees' time records and record work performed.

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Grounds/Landscape Maintenance: Knowledge and ability to install and maintain landscaped areas. Ability to grade property, install lighting or sprinkler systems, and build walkways, terraces, patios, decks, and fountains. Ability to transport and plant new vegetation, mulch, fertilize, and water flowering plants, trees, and shrubs and mow and water lawns. Ability to remove: snow and ice from roads and walkways, erect and dismantle snow fences. Knowledge and ability to use hand tools such as shovels, rakes, pruning and regular saws, hedge and brush trimmers, and axes, as well as power lawnmowers, chain saws, snow blowers, and electric clippers. Knowledge and ability to use equipment such as: tractors and twin-axle vehicles. Supervisors of landscaping and grounds keeping workers perform various functions. They should have knowledge and ability prepare cost estimates, schedule work for crews on the basis of weather conditions or the availability of equipment, and perform spot checks to ensure the quality of the service. Ability to train workers in their tasks and keep employees' time records and record work performed. Ability to read and understand landscape, drainage and grading plans. Knowledge of using (gray) water recycled for grounds keeping, planting low maintenance plants, and general, knowledge of green landscaping.

Historic Resource Management: Knowledge of Federal Preservation Law and 36 CFR Part 800 Sections 106, and 110, National Historic Preservation Act of 1966 as amended, and the National Environmental Protection Act; and ability to address compliance with the law in Federal undertakings. Knowledge and ability to make a determination of eligibility of HHS properties for listing on the National Register for Historic Places in accordance with National Register Criteria. Ability to craft and negotiate tri-lateral memorandums of agreements between the OPDIV, State Historic Preservation Officers and the Advisory Council on Historic Preservation. Knowledge and ability to make a determination of affect on historic property and prepare a 106 Report. Basic knowledge of the Secretary of the Interior's Standards for the Treatment of Historic properties and other guidelines. Must have knowledge of American and architectural history and a working knowledge of archaeology.

Information Technology: Knowledge and ability to employ a range of technology solutions to communicate, store, and manage information. Knowledge of word processing, spreadsheets, presentations, databases and the Internet. Ability to use word processing to set up and prepare reports, letters, memorandums, mailing labels, and other text material. Ability to use formulas, import data, and create spreadsheets. Ability to organize estimates, expenses, inventories, and information. Knowledge and ability to create presentations, custom animations, speaker notes and charts using design templates, and to make slide show presentations. Knowledge and ability to organize, store, and protect valuable data. Ability to build custom tools to efficiently share and store information. Ability to create databases and import data. Knowledge and ability to navigate the World Wide Web and use e-mail, net browsers, etc.

Interior Design: Knowledge and ability to plan the interior spaces of buildings. Ability to improve spaces in order to boost office and research productivity, provide a more relaxing hospital stay, or increase the building's market value. Knowledge and ability to choose and specify a style and color palette and select furniture, floor and window coverings, artwork, and lighting. Interior designers must be able to read blueprints, understand building and fire codes, and know how to make the space accessible to persons with disabilities. Working knowledge of architecture and construction. Knowledge and ability to develop programs of requirements and develop interior plans, specifications, and estimates. Knowledge of sustainable design.

Landscape Architecture: Knowledge and ability to develop a site from its conception. Working knowledge of architecture, land surveying, and engineering. Knowledge and ability to site roads and buildings. Ability to collaborate with environmental scientists, foresters, and other professionals to find the best way to conserve or restore natural resources. Knowledge and ability to create detailed plans indicating new topography, vegetation, walkways, and other landscaping details, such as fountains and decorative features. Knowledge and ability to analyze the natural elements of the site, such as the climate, soil, slope of

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the land, drainage, and vegetation; oversight of landscape drawings, specifications, and bidding requirements; and general administration. Knowledge of sustainable design.

Leadership: Use expertise and persuasiveness to influence others to follow a particular path and/or perform to their highest capabilities. Create and communicate a shared-vision by making effective decisions, supporting and developing peers and coworkers, fostering collaboration and fair work conditions, motivating others, and advocating and leading positive organizational change. Excel in personal effectiveness working with others, communication and advocacy, and management of resources. At the Senior Executive Service level, leaders must meet the OPM Executive Core Qualifications (ECQs) 1. Leading Change, 2. Leading People, 3. Results Driven, 4. Business Acumen, and 5. Building Coalitions/Communications.

Legal: Knowledge of applicable Federal statutes, regulations, Executive Orders, and rules including knowledge of topics such as Federal procurement, claims, agreements, fiscal matters, personnel matters, environmental matters, FOIA, Congressional inquiries, ethics, patents, and intellectual property as they pertain to Federal facilities and Federal real property. Knowledge of local, state and federal environmental laws, regulations and legal procedures. Knowledge of employee discipline and performance matters, labor issues, equal employment opportunities (EEO) matters, and alternative dispute resolution (ADR). Knowledge and ability to enforce conditions and provisions of contracts, grants, agreements and leases. Knowledge of adjudication procedures for protests and claims. Ability to make determinations and findings (D&F) in contract disputes. Knowledge and ability to apply building, fire and life safety codes and standards as they relate to federal facilities and real property.

Master Planning: Knowledge and ability to develop long- and short- range plans to use land for the growth and revitalization of Federal installations Knowledge and ability to analyze social, economic, and environmental problems. Ability to examine proposed Federal facilities to be sure that these facilities will meet the changing demands placed upon them over time. Ability to keep abreast of economic and legal issues involved in zoning codes, building codes, and environmental regulations. Ability to draft and implement agency master plans. Knowledge and understanding of how agency undertakings affect the surrounding community. Knowledge and ability to plan transportation and site infrastructure. Knowledge required to develop functional and overall physical OPDIV requirements including fit of specific facility needs and requirements as well as workflow and long-term scheduling. Includes knowledge required to coordinate and incorporate the necessary facilities and other building and infrastructure to satisfy all functional, institutional needs to meet mission requirements. Knowledge of sustainable design.

Mechanical Engineering: Knowledge of planning, designing, Heating, Ventilation, and Air Conditioning (HVAC), plant engineering and maintenance, energy systems, piping and elevators, etc. Ability to analyze a project's HVAC and plumbing requirements; oversight of HVAC and plumbing drawings; specifications, and bidding requirements; and general administration. Also requires knowledge of construction contracting and contractor oversight and contracts management. Knowledge of mechanical, plumbing, and life safety codes and standards. Knowledge of sustainable design and energy conservation techniques and equipment.

Occupational Health and Safety: Knowledge of Federal and State OSHA regulations, policies, and procedures to develop and implement preventative measures regarding work-related and environmental health-related injuries, illnesses, and deaths. Develops, implements, manages, and assesses the effectiveness of programs, practices, and policies designed to promote the health and well being of employees.

Organizational Knowledge: Maintains and applies current understanding of HHS and OPDIV mission, strategic plan and goals. Organizational Structures: Knowledge of organizational structure of HHS and OPDIVS. External Awareness: Identifies and keeps up-to-date on key departmental and OPDIV policies and economic, political, and social trends that affect the organization.

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Partnership and Business Development: Knowledge, capabilities, and practices associated with the effective targeting and acquisition of external partnerships and business opportunities, including funding opportunities for projects and programs. Includes an understanding of the Agency's strategic plan, the ability to identify, assess, and forecast new business opportunities such as technology transfer, leasing, enhanced use leasing, and development and use of appropriate marketing strategies. Requires knowledge of relevant markets, customer needs in those markets, and an ability to recognize and analyze market trends. Involves development or assessment of proposals to win business, and management of existing agreements with external entities such as industry, government, university, and international partnerships. Ability to facilitate and manage partnerships that support Agency strategies and partner requirements. Ability to integrate and work with the appropriate elements of the agency's technical and support communities. Ability to develop networks and build alliances, engage in cross-functional activities, collaborate across boundaries, and find common ground with a widening range of stakeholders. Utilizes contacts to build and strengthen internal support bases.

Plant Operations: Operators for water and waste water treatment plants must have the ability to control equipment and processes that remove or destroy harmful materials, chemical compounds, and microorganisms from the water. They also control pumps, valves, and other equipment that moves the water or wastewater through the various treatment processes, after which they dispose of the removed waste materials. Knowledge and ability to read, interpret, and adjust meters and gauges to make sure that plant equipment and processes are working properly. Knowledge and ability to operate chemical-feeding devices, take samples of the water or wastewater, perform chemical and biological laboratory analyses, and adjust the amounts of chemicals, such as chlorine, in the water. Knowledge and ability to use a variety of instruments to sample and measure water quality and utilize common hand and power tools to make repairs to valves, pumps, and other equipment. Knowledge of computers to help monitor equipment, store the results of sampling, make process-control decisions, schedule and record maintenance activities, and produce reports. When equipment malfunctions, operators also must have the ability to use computers to determine the cause of the malfunction and seek its solution. Knowledge of water pollution standards set by the Clean Water Act, which regulates the discharge of pollutants, and the Safe Drinking Water Act, which specifies standards for drinking water. Knowledge of the guidelines established by Federal regulations and any guidelines imposed by the State or locality in which the plant operates.

Policy Development: Knowledge and ability in the development of technical policies and guidelines pertaining to the requirements for planning, design, construction, operations and maintenance of facilities. Must have education and professional credentials to serve as OPDIV senior level discipline expert.

Policy Management: Knowledge of HHS relationships to headquarters, OPDIVs, component facilities, partnerships, and other government agencies in order to effectively integrate services consistent with broad strategies and objectives. Requires the capability to research and apply government-wide laws and Agency operating principles, regulations, and policies associated with organizational and business functions such as financial, human resources, legal, security, communications, inspection, compliance, and health and safety. Utilizes a wide variety of resources and tools to develop, maintain, monitor, enforce, and provide oversight of HHS management requirements.

Program/Project Management: Knowledge, capabilities, and practices associated with formulating, planning, implementing, managing, tracking, and evaluating work and its associated requirements and risks, ranging from one-time projects to program-level work. Includes knowledge associated with finance, budgeting, risk assessment, schedule, configuration management, contract technical management, project controls, development, and evaluation of project technical requirements. Critical ability is to achieve the appropriate balance between resources, schedule, and attainment of technical requirements. Knowledge of sustainable design. Working knowledge of all design disciplines.

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Quality Assurance: Knowledge, capabilities, and practices associated with the planning, organizing, performing, and directing quality assurance activities for all phases of the product life cycle, including design, manufacturing, assembly, testing, and operations. Ensures by test or inspection that products comply with contractual performance and acceptance criteria. Performs quality audits and surveys at various contractor production facilities and/or coordinates and evaluates and manages quality delegations to third party surveillance activities. Ensures proper quality systems and requirements are in place and oversees efforts throughout the project life cycle.

Real Property Management: Knowledge of requirements and processes to manage real property including buildings, other infrastructure, land, and leases and other interests in property and real estate for commercial, research and development, and healthcare operations with emphasis on administrative, financial, and communication abilities. Knowledge of Federal real property leasing, cost and price analysis of lease proposals, techniques of negotiating Federal real property leases, lease administration, and Federal lease law. Knowledge of records management for financial accounting and value maintenance, including development of files and records to serve as legal documentation of ownership and material value. Knowledge of the Federal Acquisition Regulations and the Federal Management Regulations. Knowledge of facility utilization including space planning and tracking for institutional charges as well as for space management and utilization reporting at the agency as well as at the federal level.

Reliability and Maintainability Assurance: Knowledge, capabilities and practices used to design facility systems; equipment and instruments for performing their intended function for a specified interval under stated conditions (reliability) and/or have a defined capability to be restored to operational status following a failure (maintainability). Capabilities include the capacity to define and evaluate compliance with systems/equipment reliability/maintainability requirements, including redundancy requirements; model systems/equipment from a reliability/maintainability perspective, including allocations and predictions; perform and evaluate quantitative and qualitative analyses and assessments, including failure modes and effects analyses/critical items list, probabilistic risk assessments, limited life items, quantitative computations; perform and evaluate statistical analysis, trending, and trade-offs; perform and evaluate maintenance analyses, such as reliability centered maintenance techniques; evaluate system/equipment failures to determine root cause and develop corrective actions to prevent similar failures in the future; integrate reliability/maintainability requirements, activities and results with other related disciplines (competencies) such as Safety Engineering and Assurance, Risk Management, Quality Assurance, Human Factors, Software Assurance, Acquisition and Contract Management. Also includes availability, which can combine the elements of reliability and maintainability in a single parameter.

Risk Management: Knowledge, capabilities, and practices associated with risk management. This includes knowledge of fundamental risk management concepts, Continuous Risk Management (CRM) implementation in programs/projects, Risk-Based Acquisition Management (R-BAM) implementation for major procurements that require formal acquisition planning, and ongoing assessment of program/project risk management activities.

Security and Program Protection: Knowledge, capabilities and practices associated with designing security to protect facilities, personnel, property, and programs from threats or adversarial influences. Ability to assess risk, conduct surveys, and design physical counter-measures to protect personnel from potential threats; prevent unauthorized access to equipment, facilities, material, and documents; and safeguard against espionage, sabotage, damage, and theft.

Space Planning/Management: Knowledge of facility utilization includes space planning and tracking for institutional charges as well as for space management and utilization reporting at the agency and federal level. Knowledge and ability to plan the interior spaces of buildings. Ability to improve spaces in order to boost office and research productivity, provide a more relaxing hospital stay, or increase the building's market value.

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Stationary Engineering and Boiler Operations: Operators of steam, chilled water and electrical generation Plants must possess the applicable certifications required by local, state, or district jurisdictions based on the horsepower and capabilities of the equipment. These certifications are obtained only through specialized training and by passing written/oral exams by an Examination Board recognized by the applicable jurisdiction for each Plant. Operator certifications must be kept up to date. Operators should be aware of any hazardous materials (i.e., asbestos, PCB's, fuels, gases, etc.) and the appropriate abatement or HAZMAT management procedures associated with them. Knowledge and ability to operate and maintain heating, air-conditioning, refrigeration, and ventilation systems including diesel engines, turbines, generators, pumps, condensers, and compressors. Ability to start up, regulate, repair, and shut down equipment. Knowledge and ability to ensure that the equipment operates safely, economically, and within established limits by monitoring meters, gauges, and computerized controls. Ability to control equipment manually and make necessary adjustments. Ability to record relevant events and facts concerning the operation and maintenance of the equipment. Knowledge and ability to check safety devices, identifying and correcting any trouble that develops. Knowledge and ability to use hand and power tools to perform repairs and maintenance ranging from a complete overhaul to replacing defective valves, gaskets, or bearings. Knowledge and ability to service, troubleshoot, repair, and monitor modern systems, and use sophisticated electrical and electronic test equipment. Knowledge and ability to use computers to operate: mechanical, electrical, and fire safety systems. Ability to monitor, adjust and diagnose these systems from a central location, using a computer linked into the buildings' communications network. Knowledge and ability to conduct routine maintenance, such as lubricating moving parts, replacing filters, and removing soot and corrosion that can reduce the boiler's operating efficiency. Knowledge and ability to test the water in the boiler and add chemicals to prevent corrosion and harmful deposits that may damage equipment. Knowledge and ability to maintain and balance air systems, as well as hydronic systems that heat or cool buildings by circulating fluid (such as water or water vapor) in a closed system of pipes. Knowledge and ability to check the air quality of the ventilation system and make adjustments to keep the operation of the boiler within mandated guidelines.

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Appendix 2: HHS Real Property Workforce Skills Analysis Tools

*The following is modeled from a survey tool developed by the Office of Personnel Management to assist federal organizations with workforce competency assessments. This survey tool may provide an effective and efficient template for tailoring to HHS Real Property Management.

This tool may be used in a variety of ways, and should be seen as a starting point that may require some modification for your specific use. This particular survey is designed to obtain important information about the work performed in occupations for real property management.

The purpose of the survey is to determine the skills and competencies that are vital to the accomplishment of an agency's mission, goals and objectives. You may want to ask all of your components to complete the survey for their work units. The aggregated results of the survey can be used to determine the skills and competencies that will be required now and in the future. You may also want to share the results with the Office of Management and Budget (OMB) as part of its government wide workforce-planning program.

This survey form has three parts. Part I is for identifying your office and the occupations you are rating. Part II lists the general competencies that have been found to be important for facility occupations in HHS. Part III is used for identifying the technical competencies needed in the occupation(s) you are rating.

Please return the completed form to _____ no later than _____

Thank you.

Part I

What is the name of the component for which you are making the ratings?

How many supervisors, managers, and executives are in your component? _____

Part II

Please indicate (1) how much of each competency listed on the following pages supervisors, managers, and executives in your work unit **currently have**; (2) how much of each competency is **currently needed** to accomplish the work in your unit; and (3) how much will be **required in the future** based on the agency's strategic plan.

Please use the following scale:

- 0 - Not required
- 1 - Basic
- 2 - Between Basic and Intermediate
- 3 - Intermediate
- 4 - Between Intermediate and Advanced
- 5 - Advanced

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Competency	Description	Have Now	Needed Now	Future Requirement
Acquisition and Contract Management	Ability to use contract or acquisition instruments and surveillance systems as necessary to ensure contract or acquisition requirements is being met throughout the life of the contract.			
Acquisition Planning	Ability to recognize factors to be considered when evaluating and providing government financing, conducting price analyses, risk, identifying actions to resolve protests, and contract awarding.			
Appropriations	Knowledge of appropriation law as it relates to construction.			
Architecture	Knowledge of design and construction of buildings. Ability to analyze project requirements, creation and development of schematic building design, oversight of architectural drawings, specifications, and bidding requirements and general administration of the construction contract to ensure functional, safe, and economical building that suit the needs of the people who use them. Knowledge of: zoning ordinances; accessibility standards; building and life safety codes and standards. Ability to communicate design concepts and vision persuasively Ability to conduct feasibility studies, selecting a site, or specifying the requirements the design must meet, such as: space requirements by researching the numbers and types of potential users of a building. Knowledge of sustainable design.			
Budget Management	Ability to maintain available resources, making resource decisions based on need and availability, and developing and implementing strategies to make rational and well thought-out decisions related to organizational resources			
Building Management	Ability to be responsible for the day-to-day operations of a single building. Knowledge and ability to ensure that the property is safe and properly maintained, through routine inspection the grounds, facilities, and equipment to determine whether repairs or maintenance is needed.			
Business Management	Knowledge of principles and practices related to managing the internal and external operations of a business unit to effectively accomplish mission objectives and goals, achieve customer satisfaction, develop strong relationships with other HHS external entities, and adhere to agency wide programs, policies, and procedures.			
CADD/Drafting	Ability to prepare technical drawings and plans for construction, space plans and as built drawings.			
Civil/Structural Engineering	Ability to analyze project civil/structural requirements, oversight of civil/structural drawings, specifications, and bidding requirements and general administration.			
Content Knowledge	Ability to maintain and applies work-related content knowledge in field of expertise.			
Contract Formulation	Ability to form contracts through source selection planning, identifying solicitation terms and conditions, and identifying and selecting techniques for determining price reasonableness.			

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Competency	Description	Have Now	Needed Now	Future Requirement
Contract Management and Performance Assessment	Knowledge and capabilities associated with managing contracts and evaluating a contractor's performance, including identifying and evaluating commercial and noncommercial financing arrangements, determining the appropriate actions necessary to ensure customer satisfaction, identifying and selecting the appropriate course of action for resolving a contractor dispute, and identifying and implementing contract close-out procedures.			
Construction Management	Ability to plan and coordinate construction projects. Ability to schedule and coordinate all design and construction processes, including the selection, hiring, and oversight of specialty trade contractors.			
Cost Estimating	Knowledge and ability to prepare and evaluate design services cost estimates for all design disciplines at the schematic, design development, contract document levels. Ability to estimate the cost of: feasibility and special studies. Knowledge and ability to prepare and evaluate construction cost estimates at the following levels 1) Broad order of magnitude (square foot), 2) Systems, and 3) Quantity take off estimate.			
Crafts and Trades	Specialize in one kind of work, such as plumbing or carpentry. Crafts Persons are involved in many different kinds of construction and repair activities. They must have the skill in their trade to: cut, fit, and assemble materials for the construction and repair of buildings and many other structures. Ability to work from blueprints or instructions from supervisors. Crafts Persons must be proficient in the use of tools of their trades.			
Electrical Engineering	Ability to analyze a project's lighting and power requirements; oversight of electrical drawings; specifications, and bidding requirements; sustainable design; and general administration. Also requires knowledge of construction contracting and contractor oversight and contracts management.			
Energy and water Conservation	Ability to develop short and long term plans to meet the requirements of current executive orders, policies and laws. Ability to assess design and building plans to ensure the most effective energy conserving equipment is being considered.			
Entrepreneurship	Knowledge and ability to identify opportunities to develop and market new products and services within or outside of the organization. Is willing to take risks; initiates actions that involve a deliberate risk to achieve a recognized benefit or advantage.			
Environmental Engineering	Ability to develop solutions to environmental problems such as: pollution control, recycling, waste disposal, and public health issues. Must have the ability to conduct environmental management studies to evaluate the significance risk and hazards and develop solutions to prevent mishaps and improve program management. Comprehensive knowledge of and applied experience in environmental protection practices.			
Environmental Management	Ability to assess compliance with Federal, State, and local and regulatory requirements, Executive Orders, and directives. Implements environmental management systems and other proactive programs such as recycling, pollution prevention, affirmative procurement and energy management, and remediation activities under RCRA and CERCLA requirements.			

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Competency	Description	Have Now	Needed Now	Future Requirement
Environmental Planning	Ability to implement the requirements of the National Environmental Policy Act (NEPA) including developing and reviewing NEPA documentation including Environmental Assessments, Environmental Impact Statements, Findings of No Significant Impact, and Records of Decision. Coordinates public meetings to solicit input on major Agency actions.			
Environmental Remediation	Knowledge of environmental engineering, chemistry, biology, geology and hydrogeology to identify, investigate, and cleanup contaminated hazardous waste sites in compliance with Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements. Performs remediation contract management duties including evaluation of contractor performance and financial and schedule planning and tracking. Negotiates agreements with Federal, State, and local regulators.			
Evaluation and Measurement	Ability to evaluate and measure progress, programs and performance using a variety of evaluation and measurement techniques.			
Facilities Engineering	Knowledge of facilities engineering, facility evaluation, cost, schedules and formulation of performance requirements and alternative analysis/scenarios for key facilities. General knowledge of: architectural, civil/structural, mechanical and electrical engineering disciplines. Knowledge of project management and control including life-cycle costs, engineering economics, sustainable design, and project planning and evaluation including scope, cost and schedule and program controls including earned value management or other measure for facility project controls. Also requires knowledge of construction contracting and contractor oversight and contracts management.			
Facilities Operations	Knowledge of operation and maintenance of buildings installations and associated infrastructure, systems and equipment as they relate to office, research and development, healthcare and support facilities.			
Facilities Planning	Knowledge of strategic and long-term planning for facilities required to support business operations and current and future program needs.			
Fire Protection Engineering	Knowledge, capabilities and practices associated fire prevention-related tools and their application to systems for minimizing the occurrence or effects of fire.			
General Maintenance and Repair	Skills in many different crafts. Knowledge and ability to repair and maintain machines, mechanical equipment, and buildings and work on plumbing, electrical, and air-conditioning and heating systems. Ability to build partitions, make plaster or drywall repairs, and fix or paint roofs, windows, doors, floors, woodwork, and other parts of building structures. Knowledge and ability to maintain and repair specialized equipment and machinery found in cafeterias, laundries, clinics, hospitals, stores, offices, and laboratories.			

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Competency	Description	Have Now	Needed Now	Future Requirement
Grounds/Landscape Maintenance	Knowledge and ability to install and maintain landscaped areas. Ability to grade property, install lighting or sprinkler systems, and build walkways, terraces, patios, decks, and fountains. Ability to transport and plant new vegetation, mulch, fertilize, and water flowering plants, trees, and shrubs and mow and water lawns. Ability to remove snow and ice from roads and walkways, erect and dismantle snow fences.			
Historic Preservation	Knowledge of Federal Preservation Law and CFR 36- 800 Sections 106, and 110, National Historic Preservation Act of 1966, as amended and the National Environmental Protection Act; and ability to address compliance with the law in Federal undertakings Knowledge and ability to: make a determination of eligibility of HHS properties for listing on the National Register for Historic Places in accordance with National Register Criteria. Ability to craft and negotiate trilateral memorandums of agreements between: the OPDIV, State Historic Preservation Officers and the Advisory Council on Historic Preservation. Knowledge and ability to make a determination of affect on historic property and prepare an 106			
Information Technology	Knowledge and ability to employ a range of technology solutions to communicate, store and manage information. Knowledge of word processing, spreadsheets, presentations, databases and the Internet.			
Interior Design	Knowledge and ability to plan the interior spaces of buildings Ability to improve spaces in order to boost office and research productivity, provide a more relaxing hospital stay, or increase the building's market value. Knowledge and ability to choose and specify: a style and color palette and select furniture, floor and window coverings, artwork, and lighting.			
Landscape Architecture	Knowledge and ability to analyze the natural elements of the site, such as the climate, soil, slope of the land, drainage, and vegetation and oversight of landscape drawings; specifications, and bidding requirements; and general administration.			
Leadership	Ability to use expertise and persuasiveness to influence others to follow a particular path and/or perform to their highest capabilities. Create and communicate a shared-vision by making effective decisions, supporting and developing peers and coworkers, fostering collaboration and fair work conditions, motivating others, and advocating and leading positive organizational change.			

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Competency	Description	Have Now	Needed Now	Future Requirement
Legal	Knowledge of applicable Federal statutes, regulations, Executive Orders, and rules including knowledge of topics such as Federal procurement, claims, agreements, fiscal matters, personnel matters, environmental matters, FOIA, Congressional inquiries, ethics, patents, and intellectual property as they pertain to Federal facilities and Federal real property. Knowledge of: local, state and Federal environmental laws, regulations and legal procedures. Knowledge of: employee discipline and performance matters, labor issues, equal employment opportunities (EEO) matters, and alternative dispute resolution (ADR). Knowledge and ability to: enforce conditions and provisions of contracts, grants, agreements and leases. Knowledge of adjudication procedures for: protests and claims. Ability to make: determinations and findings (D&F) in contract disputes. Knowledge and ability to apply: building, fire and life safety codes and standards as they relate Federal facilities and real property.			
Master Planning	Knowledge and ability to develop long- and short- range plans to use land for the growth and revitalization of Federal installations Knowledge and ability to analyze: social, economic, and environmental problems. Ability to examine: proposed Federal facilities to be sure that these facilities will meet the changing demands placed upon them over time.			
Mechanical Engineering	Ability to analyze a project's HVAC and plumbing requirements; oversight of HVAC and plumbing drawings; specifications, sustainable design, and bidding requirements; and general administration. Also requires knowledge of construction contracting and contractor oversight and contracts management. Knowledge of: mechanical, plumbing and life safety codes and standards.			
Occupational Health and Safety	Knowledge of Federal and State OSHA regulations, policies, and procedures to develop and implement preventative measures regarding work-related and environmental health-related injuries, illnesses, and deaths.			
Organizational Knowledge	Maintains and applies current understanding of HHS and ODIV mission, strategic plan and goals. ▪ <i>Organizational Structures</i>: Knowledge of organizational structure of HHS and OPDIVS. ▪ <i>External Awareness</i>: Identifies and keeps up-to-date on key departmental and OPDIV policies and economic, political, and social trends that affect the organization.			

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Competency	Description	Have Now	Needed Now	Future Requirement
Partnership and Business Development	Knowledge, capabilities and practices associated with the effective targeting and acquisition of external partnerships and business opportunities, including funding opportunities for projects and programs. Includes an understanding of the Agency's strategic plan, the ability to identify, assess and forecast new business opportunities such as technology transfer, leasing, enhanced use leasing, and develop and use appropriate marketing strategies. Requires knowledge of relevant markets, customer needs in those markets, and an ability to recognize and analyze market trends. Involves development or assessment of proposals to win business, and management of existing agreements with external entities such as industry, government, university, and international partnerships.			
Plant Operations	Ability to control equipment and processes that remove or destroy harmful materials, chemical compounds, and microorganisms from the water. Ability to control pumps, valves, and other equipment that moves the water or wastewater through the various treatment processes, after which they dispose of the removed waste materials.			
Policy Management	Knowledge of HHS relationships to headquarters, OPDIVs, component facilities, partnerships and other government agencies in order to effectively integrate services consistent with broad strategies and objectives. Requires the capability to research and apply government-wide laws and Agency operating principles, regulations, and policies associated with organizational and business functions such as financial, human resources, legal, security, communications, inspection, compliance, and health and safety.			
Project/Program Management	Knowledge, capabilities and practices associated with formulating, planning, implementing, managing, tracking and evaluating work and its associated requirements and risks, ranging from one-time projects to program-level work. Includes knowledge associated with finance, budgeting, risk assessment, schedule, configuration management, contract technical management, project controls, development and evaluation of project technical requirements. Critical ability is to achieve the appropriate balance between resources, schedule, and attainment of technical requirements. Working knowledge of all design disciplines.			
Quality Assurance	Knowledge, capabilities and practices associated with the planning, organizing, performing and directing quality assurance activities for all phases of the product life cycle including design, manufacturing, assembly, testing and operations.			
Real Property Management	Knowledge of requirements and processes to manage real property including buildings, other infrastructure, land, and leases and other interests in property and real estate for commercial, research and development and healthcare operations with emphasis on administrative, financial, and communication abilities.			
Reliability and Maintainability Assurance	Knowledge, capabilities and practices used to design facility systems; equipment and instruments for performing their intended function for a specified interval under stated conditions (reliability) and/or have a defined capability to be restored to operational status following a failure (maintainability).			

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Competency	Description	Have Now	Needed Now	Future Requirement
Risk Management	Knowledge, capabilities and practices associated with risk management. This includes knowledge of fundamental risk management concepts, Continuous Risk Management (CRM) implementation in programs/projects, Risk-Based Acquisition Management (R-BAM) implementation for major procurements that require formal acquisition planning, and ongoing assessment of program/project risk management activities.			
Security and Program Protection	Knowledge, capabilities and practices associated with designing security to protect facilities, personnel, property and programs from threats or adversarial influences. Ability to assess- risk, conducting surveys and designing physical counter-measures to protect personnel from potential threats; prevent unauthorized access to equipment, facilities, material, and documents; and safeguard against espionage, sabotage, damage, and theft.			
Space Planning Management	Knowledge of facility utilization includes space planning and tracking for institutional charges as well as for space management and utilization reporting at the agency as well as at the federal level. Knowledge and ability to plan the interior spaces of buildings			
Stationary Engineering and Boiler Operations	Knowledge and ability to operate and maintain: heating, air-conditioning, refrigeration, and ventilation systems including diesel engines, turbines, generators, pumps, condensers, and compressors.			

Part III: Identifying Technical Competencies.

This section asks you to identify the most *critical* technical competencies for the occupation(s) that you are rating. A technical competency usually is a specific knowledge or skill area that relates to successful performance in the job. The following are examples of technical competencies:

Cost Estimating - Knowledge and practices associated with the determination, estimation, and analysis of costs associated with business functions, programs/projects, processes and/or tasks. Includes preparing, justifying and/or managing costs associated with initiatives to set priorities and track expenses in support of organizational objectives. It encompasses analytical techniques required to develop and assess estimates for hardware/software acquisition; design, integration and test, production, operations and support costs (e.g., life-cycle costs) of programs, projects, systems, and resources. Knowledge and skills required include Work Breakdown Structure (WBS) development, data collection, cost estimating relationship development and documentation, application of cost models, and evaluation of cost realism in proposals. Knowledge and ability to prepare and evaluate design services cost estimates for all design disciplines at the schematic, design development, contract document levels. Ability to estimate the cost of: feasibility and special studies. Knowledge and ability to prepare and evaluate construction cost estimates at the following levels 1) Broad order of magnitude (square foot), 2) Systems, and 3) Quantity take off estimate.

Architecture - Knowledge of design and construction of buildings. Ability to analyze project requirements, creation and development of schematic building design, oversight of architectural

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drawings, specifications, and bidding requirements and general administration of the construction contract to ensure functional, safe, and economical building that suit the needs of the people who use them. Knowledge of: zoning ordinances; accessibility standards; building and life safety codes and standards. Ability to communicate design concepts and vision persuasively Ability to conduct feasibility studies, selecting a site, or specifying the requirements the design must meet, such as: space requirements by researching the numbers and types of potential users of a building. Knowledge of sustainable design.

Quality Engineering and Assurance - Knowledge, capabilities and practices associated with the planning, organizing, performing and directing quality assurance activities for all phases of the product life cycle including design, manufacturing, assembly, testing and operations. Ensures by test or inspection that products comply with contractual performance and acceptance criteria.

Sources of Information

You should rely on a variety of sources of information to identify the most *critical* technical competencies for the functional area/occupation(s) that you are rating. These can include sources such as subject matter experts like you, your staff, position descriptions, and existing job analysis information.

Questions to Ask to Help Identify Critical Technical Competencies

When you think about the top performers in your organization, what technical skills and knowledge come to mind?

What technical competencies *distinguish* superior performance from average performance?

What technical competencies are *critical* to success in the functional area?

Completing the Rating Form

Step 1: Write the *most critical* technical competencies in the left column.

Step 2: Indicate

- (1) how much of each competency the employees in your work unit **currently have**;
- (2) how much is **currently needed** to accomplish the work in your unit; and
- (3) how much will be **required in the future** based on the agency's strategic plan.

Please use the following scale:

- 0- Not required
- 1- Basic
- 2- Between Basic and Intermediate
- 3- Intermediate
- 4- Between Intermediate and Advanced
- 5- Advanced

Example:

Technical Competency Description	Have Now	Needed Now	Required in Future
<i>Cost Estimating</i> - Knowledge and practices associated with determination, estimation, and analysis of costs asso-	2	3	4

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Technical Competency Description	Have Now	Needed Now	Required in Future
<i>Cost Estimating - Knowledge and practices associated with determination, estimation, and analysis of costs asso-</i>	2	3	4

Technical Competency Worksheet

Technical Competency Description	Have Now	Needed Now	Required in Future

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Appendix 3: HHS Real Property Workforce Education and Certification Prerequisites Guidance

Position/Discipline	Education	Certification	Position/Discipline	Education	Certification
Facility Planning & Delivery			Facilities Operations & Maintenance		
Supervisor	Required	Required ⁽¹⁴⁾	Building Manager	Desired	Desired
Architect Senior Discipline Expert	Required ⁽¹⁾	Required ⁽²⁾⁽⁴⁾	Crafts Supervisor/Foreman	Desired	Desired
Architect	Required ⁽¹⁾	Desired	Carpenter/Dry Wall Mech.	Desired	Desired
Budget Officer	Required	Desired	Electrician	Desired	Desired
Budget Analyst	Required	Desired	Plumber	Desired	Desired
Civil/Struct Engineer Sr. Disc Exp	Required ⁽³⁾	Required ⁽⁴⁾	HVAC Mechanic	Desired	Desired
Civil/Structural Engineer	Required ⁽³⁾	Desired	Painter	Desired	
Construction Manager	Required	Desired	Elevator Mechanic	Desired	Desired
Contracting Officer	Required	Warrant	Multi-Craft	Desired	Desired
Contract Specialist	Desired	Desired	Gen Maint & Repair Supv	Desired	
Cost Estimator	Required	Desired	Gen Maint & Repair Worker	Desired	
Elect Engineer Sr. Disc Exp	Required ⁽³⁾	Required ⁽⁴⁾	Grounds Maint Supv	Desired	
Electrical Engineer	Required ⁽³⁾	Desired	Grounds Maint Worker	Desired	
Environmental Engineer Sr. Disc Exp	Required ⁽³⁾	Required ⁽⁴⁾	Industrial Hygienist	Required	Required ⁽¹¹⁾
Environmental Engineer	Required ⁽³⁾	Desired	Water or Sewage Treatment Plant Operator Supv	Desired	Required ⁽¹²⁾
Environmentalist	Required		Water Treatment or Sewage Treatment Plant Operator	Desired	Required ⁽¹²⁾
Fire Protect Engineer Sr. Disc Exp	Required ⁽³⁾	Required ⁽⁴⁾	Realty Contracting Officer	Required	Warrant
Fire Protection Engineer	Required ⁽³⁾	Desired	Real Property Specialist	Required	Desired
Interior Designer Sr. Disc Exp	Required ⁽¹⁾⁽⁵⁾	Required ⁽²⁾⁽⁶⁾	Space Planner/Manager	Desired ⁽¹⁾	Desired
Interior Designer	Required ⁽¹⁾⁽⁵⁾	Desired	Stationary Eng Supv	Desired	Required ⁽¹³⁾
Landscape Architect Sr. Disc Exp	Required ⁽⁷⁾	Required ⁽⁸⁾	Stationary Engineer	Desired	Required ⁽¹³⁾
Landscape Architect	Required ⁽⁷⁾	Desired	Facilities Regulatory Compliance		
Master Planner	Required ⁽¹⁾⁽³⁾⁽⁷⁾⁽⁹⁾	Required ⁽²⁾⁽⁴⁾⁽⁸⁾⁽¹⁰⁾	Environmental Engineer	Required	Desired
Planner	Required ⁽¹⁾⁽⁷⁾⁽⁹⁾	Desired	Environmental Tech/Specialist	Required	
Mechanical Engineer Sr. Disc Exp	Required ⁽³⁾	Required ⁽⁴⁾	Federal Preservation Officer	Required	Required ⁽¹⁶⁾
Mechanical Engineer	Required ⁽³⁾	Desired	Energy Officer	Required	Certified
Program Manager	Required ⁽¹⁾⁽³⁾	Required ⁽²⁾⁽⁴⁾	Senior Discipline Expert	Required	Required
Project Officer GS 13+	Required ⁽¹⁾⁽³⁾	Required ⁽²⁾⁽⁴⁾	Occupational Safety & Health Professional	Desired	Desired ⁽¹⁷⁾
Project Officer	Required ⁽¹⁾⁽³⁾	Desired			
Transportation Planner/Eng	Required	Required			
Table Notes: 1. Architectural Degree 2. Registered Architect 3. Engineering Degree 4. Registered Engineer 5. Interior Design Degree 6. Registered Interior Designer 7. Landscape Architecture Degree 8. Registered Landscape Architect 9. City, Urban Regional Planning Degree 10. Certified Planner 11. Certified Industrial Hygienist (CIH) 12. Certification 13. License 14. Professional registration required across functional areas 15. Project Offices at the GS 13 level or above 16. Qualified by the Advisory Council 17. Certified Safety Professional					

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Appendix 4: Resources

Employee Development

HHS has available several programs and strategies for acquiring and maintaining a qualified workforce including the following:

- *Senior Executive Service (SES) Candidate Development Program:* The SES Candidate Development Program at HHS is a comprehensive, 6 to 18 month program. The program provides career enhancement and executive skill development for GS-14 and GS-15 (or equivalent work experience) employees with high potential for the SES ranks.
- *Career Mentoring Program:* The HHS Career Mentoring Program is an effort to increase staff productivity and improve employee retention. The purpose of the program is to address the rapidly changing work environment and develop new employees so that HHS can continue to fulfill its mission to the American People. Mandatory training is the foundation of the program, so that both mentor and mentee are starting the program with realistic expectations, a thorough understanding of how the program works and specific goals they can work toward.
- *Retention Strategies:* HHS has continued to progress away from a pass/fail system for all supervisors, managers, and non-bargaining unit employees; developed a mid-career level competency-based leadership program which prepares top employees for advancement through leadership development opportunities in job rotations, classroom training and other activities; created a competency framework for the entire Department; focuses on activities to target and retain high performing employees through such programs as the Employee Accelerated Growth and Leadership Enrichment program (EAGLE); focuses incentives on top performers; and aligns awards to organizational performance.
- *Presidential Management Intern (PMI) Program:* HHS has hired nearly 1,000 PMIs since the program was established in 1978 -- more than any other agency. HHS averages about 60 new PMI hires annually and is the premier employer of Presidential Management Interns. HHS provides its Presidential Management Interns with an enriched environment for training, rotational assignments, and professional development.
- *Emerging Leaders Program:* The Emerging Leaders Program is intended for the best graduates who are eager to make contributions to HHS. The program provides training in departmental core competencies, job rotations to gain familiarity with people and programs at HHS, mentors to provide career development advice and support, and training in technical competencies. Career paths include Facilities Management. These positions are involved in managing the operation and maintenance of buildings, grounds, and other facilities. They typically involve directing work performed by a variety of trades and labor employees to ensure continued operation of government buildings.

Training

Having and promoting a “learning organization” does not mean that individual training is not necessary. Real property managers have job-related and profession-related training requirements. There are laws, regulations, executive orders, departmental instructions and guidance that identify essential skills and qualification requirements and there are those that can reasonably be discerned by virtue of the types of work involved for example specific training in environmental laws. In addition, many who are part of the real property management team are professionally registered engineers and architects who have annual requirements for continuing education and these requirements must be met.

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Appendix 5 lists a variety of training sites that provide sources of managerial training and technical training for real property managers including Know Net, Federal Learning Technology, American Management Association Government Services, Government Online Learning Center, Federal Executive Institute and Management Development Centers and HHS University. In addition there are sites and information pertaining to professional registration, licensing and training for engineers and architects.

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Appendix 5: Training Resources

American Management Association Government Services: American Management Association Government Services is a program of seminars specifically created to support federal government departments and agencies. The seminars help develop practical business skills at all levels of management and with all personnel (Website: govserv@amanet.org).

Construction Industry Institute (CII) Technology Assisted Learning (TAL): TAL uses the Internet to deliver CII education modules. CII members can access the CII curriculum through the Internet and benefit from fully interactive, Web-based learning, professionally developed courses, PDH credits, and an advanced Learning Management System. For full program description and enrollment instructions, visit <http://construction-institute.org/tal.cfm> and click on the corresponding link. The current curriculum consists of: Constructability (four courses); Construction Safety: Zero Accident Techniques; Development and Alignment of Project Objectives; Scope Control and Change Management; Pre-Project Planning: Implementing A Pre-Project Planning Program; Pre-Project Planning: Organizing for Pre-Project Planning; Pre-Project Planning: Select Project Alternatives; Pre-Project Planning: Develop a Project Scope Definition Package; Pre-Project Planning: Decide Whether to Proceed with Project.

Federal Executive Institute and Management Development Centers: The Federal Executive Institute and Management Development Centers are dedicated to developing career leaders for the Federal Government. Our three centers, in Charlottesville, Virginia, Shepherdstown, West Virginia, and Denver, Colorado all offer exceptional residential learning environments and are staffed with program directors, seminar leaders, and facilitators drawn from America's elite corps of training professionals (Website: leadership.opm.gov/courselist.cfm).

The Federal Facilities Council: The Federal Facilities Council (FFC) was established in 1953 as the Federal Construction Council. It operates under the auspices of the Board on Infrastructure and the Constructed Environment (BICE) of the National Research Council, the principal operating agency of the National Academies and the National Academy of Engineering. The FFC's mission is to identify and advance technologies, processes, and management practices that improve the performance of federal facilities over their entire life cycle, from planning to disposal (Website: <http://www7.nationalacademies.org/ffc/>).

Federal Learning Technology Program Overview: Fed Learn is a GSA program serving the technology needs of the federal government. Services are provided on a cost reimbursable basis under the authority of the Information Technology Management Reform Act (ITMRA) and the Office of Management and Budget (OMB). The program provides Information Technology (IT) solutions to traditional training issues encountered by federal clients worldwide. Fed Learn teams with private sector contractors to meet the training needs of federal organizations. (Web site: gsa.gov)

The U.S. Army Corps of Engineers (USACE) Professional Development Support Center: The U.S. Army Corps of Engineers (USACE) Professional Development Support Center (PDSC) is the Center for Learning and Training for the Corps of Engineers. It is under supervision of the Headquarters Directorate of Human Resources. The PDSC manages and implements the Propoint-Sponsored Engineer Corps Training (PROSPECT) Program. This program provides job-related training through technical, professional, managerial, and leadership courses to meet the unique needs of the Army Corps of Engineers and other government agencies (Website: <http://pdsc.usace.army.mil/aboutUs.aspx>).

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Gov Online Learning Center: The Gov Online Learning Center is a Government wide e-Training site dedicated to one-stop access to high quality e-Training courses, tools, and services to the Federal workforce (Website: www.golearn.gov).

HHS University: The HHS University was established to provide consistent and equitable learning opportunities for all Department of Health and Human Services employees. The HHS U provides numerous opportunities for employees to sharpen their skills and prepare themselves to meet the organization's strategic objectives. The HHS U supports the Department's mission and goals through high-quality, cost-effective continuous learning and development. It provides core training and development opportunities that facilitate the establishment of a workforce capable of responding expeditiously to changing workload needs and priorities. It provides a forum for intellectual exchanges between DHHS and partner institutions. The HHS U provides an integrated framework for assessing and addressing future leadership development and skill requirements. Leadership development programs assist in providing a strong foundation for current and future HHS leaders. The HHS Learning Portal provides access to a variety of training and development courses, resources and tools (<http://learning.hhs.gov>). Part of the HHS Learning Portal is the HHS University Electronic Course Catalog. HHS U is in the process of developing a wide range of training opportunities to meet the developmental needs of the Department's employees and managers. HHS University has partnered with colleges and universities around the country to bring HHS employees new continuing education opportunities. Participants will be able to take credit and non-credit classes with any of our partner institutions. Each of the schools offers distance-learning alternatives, such as computer-based courses, so it is easy for employees stationed throughout the country to take advantage of this new program.

Know Net: HHS provided significant financial, human resources and content development support to portions of Know Net. Know Net is a knowledge management, e-learning and performance support system for Federal Agencies, State and local governments, contractors, grantees and citizens.

The National Preservation Society Historic Preservation Training Center: The NPS Historic Preservation Training Center offers a three-year training program for NPS Exhibits Specialists (Restoration), GS 7-11, and Preservation Specialists, WG 7-9. HPTC supports the preservation and maintenance work of the National Park Service by providing a comprehensive program of preservation trade education and training. The HPTC was established in 1977 to meet the growing demand for specialists within the NPS who could preserve the thousands of historic resources within the National Park System. The HPTC emphasizes historic preservation projects as its main vehicle for teaching preservation philosophy, building crafts, building technology, and project management skills. As a result of over 400 completed preservation projects, the HPTC is a leader in historic preservation and is recognized by its clients for quality preservation trade training and project craftsmanship. [Historic Preservation Training Center](#) (HPTC), [National Park Service](#) (NPS).

Professional Registration, Licensing and Training for Engineers: Every state, the District of Columbia, and the U.S. territories have laws regulating the practice engineering. These laws protect the public health, safety, and welfare by insuring that those receiving licenses to practice have at least met certain requirements of competence, ability, experience, and character. Licensure laws vary from state to state and are exclusively under the control of the individual state legislatures. But generally, the licensure laws for professional engineers require graduation from an accredited engineering curriculum followed by approximately four years of responsible engineering experience, and finally the successful completion of a written exam. Some states may waive the written exam on the basis of education and experience, but the trend is toward an examination

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requirement. To find out about licensure requirements and dates and locations of licensure exams, contact specific [state/territory licensure board \(NCEES Web site\)](#).

Many universities encourage engineering students to take the FE exam during their senior year, and some provide review courses. NSPE sponsors self-study review courses for those who take engineering licensure examinations after graduation. For more information about the courses, contact NSPE Member Services, 1420 King Street, Alexandria, VA 22314-2794; toll free: 888/285-NSPE (6773); e-mail: custserv@nspe.org. Each state has different requirements for continuing education. The following website lists the continuing education requirements by state: http://www.nspe.org/licensure/state_ce_requirements.pdf

Professional Registration, Licensing and Training for Architects: All States, the District of Columbia, and four U.S. territories (Guam, the Northern Mariana Islands, Puerto Rico, and the Virgin Islands) require individuals to be licensed (registered) before they may call themselves architects or contract to provide architectural services. Many architecture school graduates work in the field even though they are not licensed or while they are in the process of becoming licensed.

A licensed architect is required to take legal responsibility for all work. Licensure requirements usually include a professional degree in architecture, a period of practical training or internship, and passage of all divisions of the Architect Registration Examination (ARE). The Architect Registration Examination (ARE) assesses candidates for their knowledge, skills, and ability to provide the various services required in the practice of architecture. The ARE is the only examination prepared by National Council of Architectural Registration Boards (NCARB) and has been adopted for use by all 55 U.S. member boards and the Canadian provincial architectural associations as the registration examination required of all candidates for architectural registration.

NCARB assists architects in keeping their skills and knowledge up to date through its [Professional Development Program](#) of self-study courses. Since its implementation in 1993, the program has grown to include 17 (and counting!) AIA- and state-approved self-study monographs. In increasing numbers, [NCARB's member boards are requiring evidence](#) of lifelong learning when architects apply for registration renewal. The Professional Development Program recognizes the need for a convenient and affordable continuing education resource. Twenty-two jurisdictions require continuing education to maintain licensure, and many more are expected to adopt mandatory continuing education. Requirements vary but usually involve the completion of a certain number of hours every year or two through seminars, workshops, formal university classes, conferences, self-study courses, or other sources.

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Appendix 6: Reference List

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