

USGS

WORKFORCE PLAN

FY 2008-2013

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U.S Geological Survey Workforce Plan 2008-2013

MISSION

The mission of the U.S. Geological Survey is to provide reliable scientific information to: describe and understand the Earth; minimize loss of life and property from natural disasters; assist others in managing water, biological, and other natural resources; and enhance and protect the quality of life.

The U.S. Geological Survey (USGS) serves the Nation as an independent fact-finding agency that collects, monitors, analyzes, and provides scientific understanding about natural resource conditions, issues, and problems. The value of the USGS to the Nation rests on its ability to carry out studies on a national scale and to sustain long-term monitoring and assessment of natural resources. Because it has no regulatory or management mandate, the USGS provides impartial science that serves the needs of our changing world. The diversity of scientific expertise enables the USGS to carry out large-scale, multi-disciplinary investigations that build the base of knowledge about the Earth. In turn, decision makers at all levels of government, and citizens in all walks of life, have the information tools they need to address pressing societal issues.

USGS Science and Business Goals and How They Support the Department of the Interior Strategic Plan

The U. S. Geological Survey (USGS) is the Nation's principal natural science research and information agency. The USGS conducts research, monitoring, and assessments that contribute to understanding the natural world—America's lands, water, and biological resources. The USGS provides reliable, impartial information to the citizens of this Country and to the global community in the form of maps, data, and reports containing analyses and interpretations of water, energy, mineral and biological resources, land surfaces, marine environments, geologic structures, natural hazards, and dynamic processes of the Earth. USGS data and information are used daily by managers, planners, and citizens to understand, respond to, and plan for changes in the environment.

As the science research Bureau of the Department of the Interior (DOI), the USGS collaborates with the Department's land and resource management Bureaus to provide science support to ensure that the increasingly complex management requirements of DOI's vast resources are informed by credible science. USGS science supports the resource protection, resource use, and serving communities goals of the DOI Strategic Plan. USGS business and science support activities support the Management Excellence goal of the DOI Strategic Plan.

The USGS vision, mission, and strategic direction focus on responsiveness and customer service, underscoring the application of science to customer, partner, and other stakeholder needs. They direct the combined expertise of the Bureau's scientific disciplines and define its commitment to pursuing a multidisciplinary approach to providing science for a changing world. An overview of how the USGS science and information support the Department's Strategic Plan follows.

Resource Protection - Improve the understanding of national ecosystems and resources through integrated interdisciplinary assessment

Interior's resource protection mandate has grown dramatically, both in terms of the numbers and types of resources involved and in the complexity of the associated management issues. Interior administers resource protection programs on thousands of upland, wetland, and aquatic parcels within the Department's direct jurisdiction and provides resources for conservation activities on non-Federal lands. Extreme changes in the environment are less costly if their likely effects can be mapped, quantified, and anticipated. Resources can be more efficiently used if the impacts of their extraction can be predicted and mitigated. Damaged or endangered ecosystems can be repaired more effectively if the natural processes that form and maintain them are accounted for in remediation and restoration plans. Strategies for conserving and using the Nation's lands and resources are improved when the natural processes at work are incorporated into predictive models and management plans in an adaptive manner. USGS science programs work collaboratively with many organizations across the country to provide critical information to assist land and resource management agencies, partners, stakeholders, customers, and the general public with timely information to inform their decision-making.

Interior addresses four outcome goals in the Resource Protection mission area: lands and waters, fish and wildlife, culture and heritage, and improving understanding of ecosystems and natural resources. To improve understanding, the USGS produces scientific assessments and information on the quality and quantity of our Nation's water resources; collects, processes, integrates, archives, and provides access to geographic, geospatial and natural resource data; and conducts multi-purpose natural science research to promote understanding of earth processes. USGS's multiple scientific disciplines combine their expertise in interagency ecosystem initiatives across the United States, from South Florida to the Puget Sound, where scientists are working together to understand, evaluate, and provide options for better resource management decisions. The development of new methods and techniques allow USGS scientists to work more efficiently and cost effectively. For example, the USGS developed data collection protocols for use with palm pilots/personal digital assistants in the field for collecting amphibian information. This technology allows field scientists to collect data in real time for the Amphibian Research and Monitoring Initiative database without having to return to the office to enter the data on computers.

Resource Use - Improve the understanding of energy and mineral resources to promote responsible use and sustain the nation's dynamic economy

Managing the vast resources of America's public lands has been a core Interior responsibility since the Department was founded in 1849. The lands and offshore areas that fall under Interior's sphere of influence today supply roughly 30 percent of the Nation's domestic energy production, including 35 percent of the natural gas, 35 percent of the oil, 44 percent of the coal, 17 percent of the hydropower, and 50 percent of the geothermal energy. Managing resources has become increasingly more complex. Today, we are often called upon to determine where, when, and to what extent renewable and non-renewable economic resources on public lands should be made available. That task demands that we balance the economy's call for energy, minerals, forage, and forest resources with our resource protection and recreation responsibilities. USGS research on and assessments of undiscovered non-fuel mineral and energy resources assist the Department's land management agencies in their goal of providing responsible management of resources on Federal lands.

Each Interior Bureau has a role in implementing the President's National Energy Policy addressing more than 100 actions dealing with the development of renewable and alternative energy sources such as solar, geothermal, wind, gas hydrates, and oil shale. The USGS is the primary provider of earth science energy resource information and assessments for a variety of stakeholders in addition to Interior, including Federal agencies such as the U.S. Department of Agriculture Forest Service and Department of Energy, local and State agencies and coal and electric power producers. The USGS Energy Resources Program conducts national and global energy research on and assessments of oil, natural gas, coalbed methane, gas hydrates, coal, geothermal resources, oil shale, and uranium; evaluates environmental and human health impacts associated with production, use, and occurrence of energy resources; and provides information for the Nation to make sound decisions regarding increases or changes in domestic energy production or mix with an understanding of potential impacts on the environment.

The United States is the world's largest user of mineral commodities. Processed materials of mineral origin accounted for more than \$542 billion in the U.S. economy in 2006, an increase of 14 percent over 2005. U.S. manufacturers and consumers of mineral products depended on other countries for 100 percent of 17 mineral commodities and for more than 50 percent of 45 mineral commodities that are critical to the U.S. economy. Current and reliable information about both domestic and international mineral resources and the consequences of their development informs decisions about supply and development of mineral commodities. The USGS Mineral Resources Program is the sole Federal provider of scientific information for objective resource assessments and unbiased research results on mineral potential, production, consumption, and environmental effects. Life cycle analysis of nonfuel mineral systems demonstrates the connections between various natural and anthropogenic processes through which minerals are made available to sustain developed societies. Land managers and policymakers use this information to support resource use decisions to

enhance public benefit, promote responsible use, and ensure optimal value. Among the tools and technologies developed and employed in these functions are assessments for as-yet undiscovered mineral deposits in the US and around the world, and Web-based data delivery tools that serve 128 years of mineral resource, geochemical and geophysical data to land managers, Federal agencies responsible for national security and economic policy, the public, and other research scientists.

Serving Communities - Improve the understanding, prediction, and monitoring of natural hazards to inform decisions by civil authorities and the public to plan for, manage, and mitigate the effects of hazard events on people and property

The Department is responsible for protecting lives, resources, and property; providing scientific information to reduce risks from earthquakes, landslides, and volcanic eruptions, and fulfilling the Nation's trust and other special responsibilities to American Indians, Native Alaskans, and residents of Island Communities. The United States is subject to a variety of natural hazards that can result in considerable human suffering and billions of dollars in property and business losses. The occurrence of these hazardous events is inevitable and largely uncontrollable. However, the extent of damage and loss of life can be reduced through preventative planning; social, economic, and engineering adaptations; real-time warning capabilities; and more effective post-event emergency response. Central to this preplanning is the availability of accurate, scientifically based geologic hazards assessments and real-time warning systems that define the nature and degree of risk or potential damage. The more precisely risks can be defined the greater the likelihood that appropriate mitigation strategies will be adopted (e.g., building codes for new construction and retrofitting; land-use plans; and design and location/routing of critical infrastructure such as highways, bridges, subways, water, sewer, gas, electric, local zoning regulations, and petroleum-distribution networks). The sooner information reaches emergency response centers the sooner teams can be dispatched to resolve time-sensitive medical, utility, or other infrastructure problems. Under the Stafford Act (P.L. 93-288), Interior is responsible for issuing timely warnings of potential geologic disasters to the affected populace and civil authorities in the United States and delegates this responsibility to USGS. For foreign disasters, the USGS works with the Agency for International Development's Office of Foreign Disaster Assistance (USAID/OFDA) in responding to appeals for technical assistance from affected countries.

USGS geologic hazards programs conduct targeted research, gather long-term data, operate monitoring networks, perform assessments and modeling, and disseminate findings to the public, enabling the Nation's emergency management capabilities to warn of impending disasters, better define risk, encourage appropriate response, and mitigate damage and loss. These programs are designed to produce information and understanding that will lead to a reduced impact of natural hazards and disasters on human life and the economy.

For earthquakes, the USGS operates the Advanced National Seismic System (ANSS), which includes a national Backbone network, the National Earthquake Information

Center, the National Strong Motion Project, and 15 regional seismic networks operated by USGS and its partners. When earthquakes strike, ANSS delivers real-time information, providing situational awareness for emergency-response personnel. In regions with sufficient seismic stations, that information includes—within minutes—a ShakeMap showing the distribution of potentially damaging ground shaking, information used to target post-earthquake response efforts. When fully implemented, ANSS will provide such dense station coverage for all at-risk urban areas. Information from ANSS is a key input to the USGS National Seismic Hazard Maps, which help communities in earthquake-prone regions develop safer building practices.

For volcanoes, the USGS has made steady annual progress on both monitoring and hazard-assessment efforts. Using supplemental funds provided by the FAA, the volcano monitoring network has been expanded, on average, each year to include two previously unmonitored volcanoes. At the end of 2006, the program was monitoring 51 volcanoes. On average, one to two volcano hazard assessments have been released to customers each year, and there has been steady progress on development of community response plans in the Cascades. The program estimates that 256 counties or comparable jurisdictions are threatened by volcano hazards. At the end of 2006, 190 had adopted or were served by emergency management organizations that had adopted response plans based on USGS volcano hazard assessments. Development of a National Volcano Early Warning System (NVEWS) is now a major goal of the USGS following an assessment of volcanic threat and monitoring capabilities for all 169 of the Nation's active volcanoes (USGS Open-File Report 2005-1164, <http://pubs.usgs.gov/of/2005/1164/>).

For landslides, hazard assessments provide the scientific basis for land-use, emergency management, and loss reduction measures. Landslide hazard research concentrates on understanding landslide processes, developing and deploying instruments that monitor threatening landslides, and forecasting the onset of catastrophic movement of future landslides. Research into processes and forecasting methodologies is conducted on the types of landslides that produce losses in the United States such as landslides related to steep slopes, heavy rains, and vegetation loss due to wildfires. The USGS deploys near-real-time monitoring systems at sites in California, near Yosemite National Park and in Oregon in Portland and near Newport. These sites provide continuous rainfall and soil-moisture and pore-pressure data needed to understand the mechanisms of landslide occurrence. The USGS provides timely information through the National Landslide Information Center (NLIC) which maintains several databases: the Landslide Bibliography (more than 15,000 entries), the International Landslide Experts Roster of about 2,000 entries, and Major Landslide Events of the United States (part of the USGS National Atlas). The NLIC also has real-time measurements from ongoing landslide monitoring projects available for viewing via the Internet. These measurements are used to forecast landslide movement or changes in an individual landslide's behavior. Monitoring can detect early indications of rapid catastrophic movement. Up-to-the-minute or real-time monitoring provides immediate notification of landslide activity, potentially saving lives and property. Continuous information from

real-time monitoring also provides a better understanding of landslide behavior for scientists, engineers, and public officials.

Management Excellence - Manage the Department to be highly skilled, accountable, modern, functionally integrated, citizen-centered and result-oriented.

Successful management is imperative to meet strategic mission goals. To succeed, USGS will need increased accountability for results, more effective means of leveraging available resources, and the continuous introduction and evaluation of process, structural, and technology improvements. The Department's management approach is guided by the Secretary's key business principles: accountability and modernization/integration. In the Interior Strategic Plan, our goals of Accountability and Modernization/Integration and the President's Management Agenda converge to form a non-mission area of the strategic plan—Management Excellence. Like the programmatic mission areas, Management Excellence is structured to include outcome goals and strategies with associated performance measures. Each aspect of the President's Management Agenda is reflected within this framework. USGS supports Management Excellence goals throughout the organization with dedicated funding in Science Support and Facilities as well as the information security, technology, and resource components of Enterprise Information (EI).

The Enterprise Information Activity (EIA) serves as the focal point for the Bureau's information-related resources and activities; information technology infrastructures (networks, hardware and software); information and communications policies and standards; and information services (such as libraries, information centers, and the USGS presence on the Internet). EIA strengthens scientific inquiry within USGS and the broader natural science community by having a more efficient and less complex path to relevant USGS information in all forms. Enhanced access to services that deliver science information can easily be understood, shared, and applied. Through a randomly selected, telephone survey in 2006, the Pew Internet and American Life Project report found that 40 million Americans rely on the internet as their primary source for news and information about science. Half of the Internet users reported using at least one of the following six websites: National Geographic, USGS, National Aeronautics Space Administration (NASA), the Smithsonian, Science.com, and Nature.com. When these websites were ranked according to the number of Internet users looking for general information, USGS's website tied for third place with National Geographic, while Discovery and PBS ranked first and second, and NASA was fourth. About 23 percent [of internet users] have been to the main website of the USGS, considered the main U.S. government site for earth science information http://www.pewinternet.org/PPF/r/191/report_display.asp.

WORKFORCE PROFILE

General Demographics

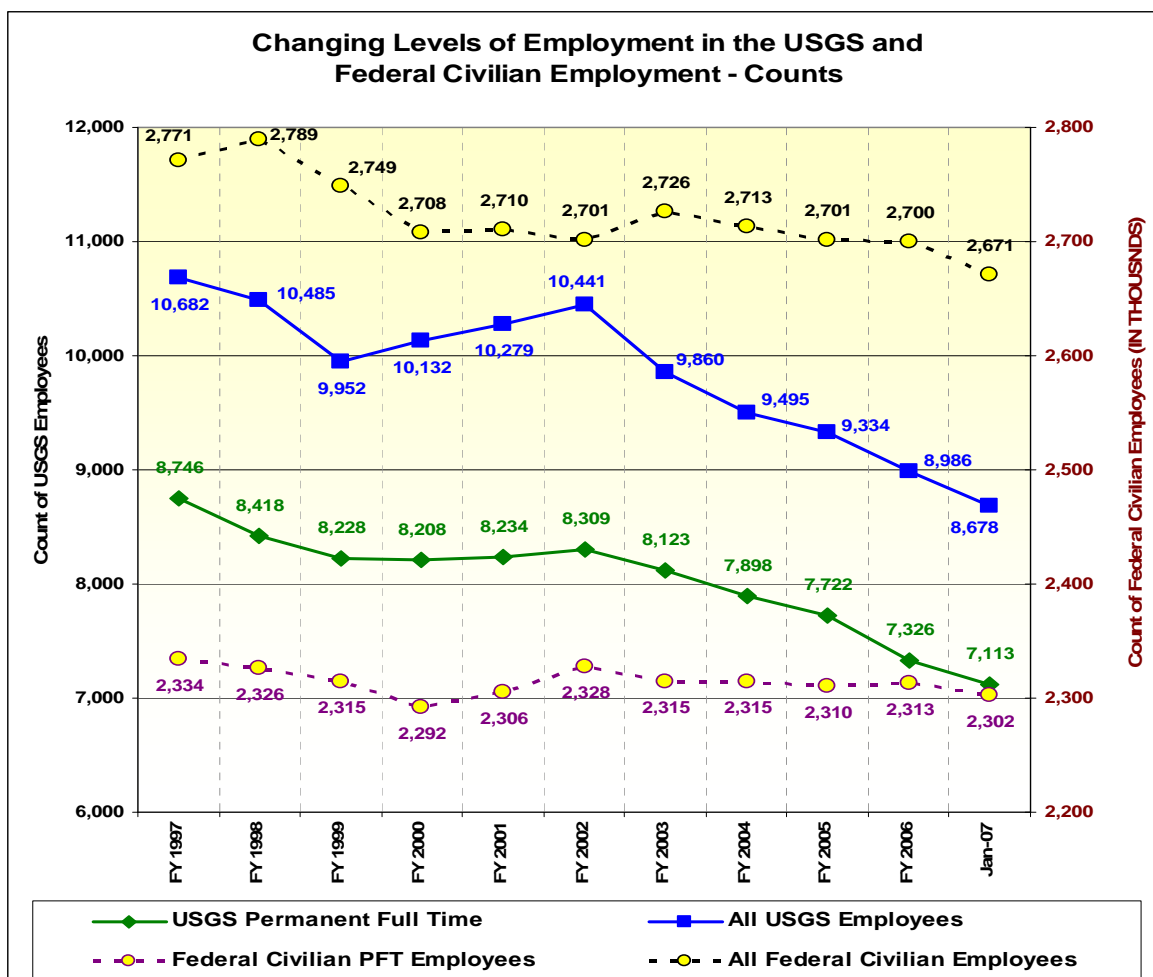
As of the end of September 2007, the U. S. Geological Survey (USGS) employed 8,840 employees in 154 different Occupational Series at 319 duty stations throughout the United States and in several foreign countries. Since FY 1990, the total employee population has fluctuated from a high of 10,956 in FY 1992 to the current low of 8,840 in September 2007, while the numbers of employees on Permanent appointments with Full Time work schedules have fluctuated from a high of 9,016 in FY 1992 to the current low of 7,131 in September 2007. March 2007 employment numbers are slightly lower, with 8,678 total employees and 7,113 Full-Time Permanent employees.

Employment in the U.S. Geological Survey				
As of End of Fiscal Year				
	Count of Full-Time Permanent Employees at End of Fiscal Year	Percent Change in FTP Employee Count from Previous Year Listed	Count of All Active Employees at End of Fiscal Year	Percent Change in Total Employee Count from Previous Year Listed
FY 1990	8,627	0.44%	10,480	-1.17%
FY 1991	8,869	2.81%	10,845	3.48%
FY 1992	9,016	1.66%	10,956	1.02%
FY 1993	8,972	-0.49%	10,788	-1.53%
FY 1994	8,429	-6.05%	9,888	-8.34%
FY 1995	7,989	-5.22%	9,220	-6.76%
FY 1996	7,626	-4.54%	8,949	-2.94%
FY 1997	8,746	14.69%	10,682	19.37%
FY 1998	8,418	-3.75%	10,485	-1.84%
FY 1999	8,228	-2.26%	9,952	-5.08%
FY 2000	8,208	-0.24%	10,132	1.81%
FY 2001	8,234	0.32%	10,279	1.45%
FY 2002	8,309	0.91%	10,441	1.58%
FY 2003	8,123	-2.24%	9,860	-5.56%
FY 2004	7,898	-2.77%	9,495	-3.70%
FY 2005	7,722	-2.23%	9,334	-1.70%
FY 2006	7,326	-5.13%	8,986	-3.73%
FY 2007	7,131	-2.66%	8,840	-1.62%
Mar-07	7,113		8,678	

Source: FY 1990 to present – Federal Personnel Payroll System

During the mid-1990's several events occurred impacting the USGS employee population. The USGS, along with other Federal agencies, took steps to reduce employee populations as a result of the National Performance Review. In 1995, the USGS conducted a major reduction-in-force (RIF). In the prior fiscal year, there was a higher percentage of employees electing to separate from the USGS in anticipation of this RIF. The 14.6% growth in FY 1997 of the Full-Time Permanent (FTP) workforce is attributed to the transfer of the National Biological Service and a portion of the Bureau of Mines to the USGS, making the USGS the primary research organization of the Department of the Interior. With the exception of slight increases in FY 2001 and 2002, the Bureau FTP employee population has continued to decline to its present level since that time.

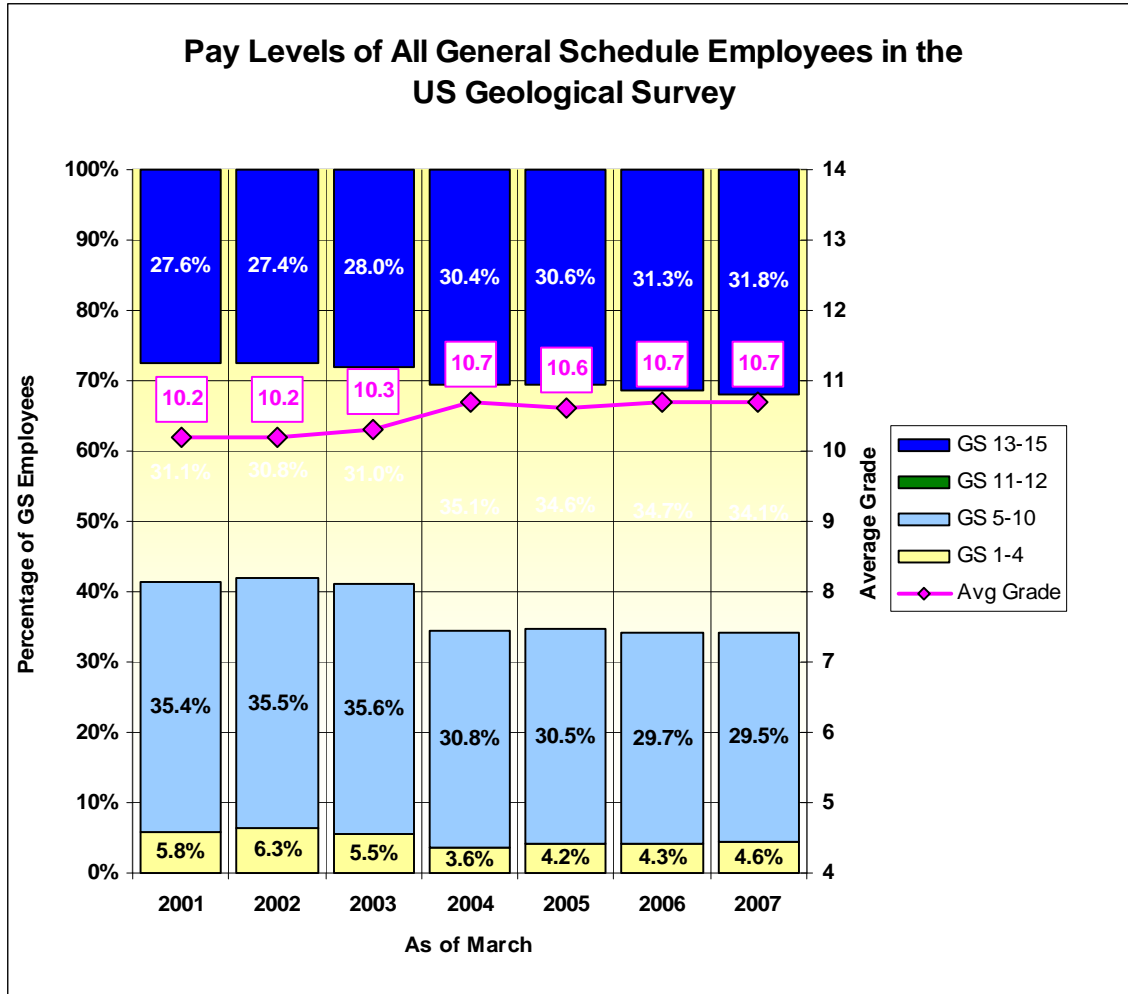
The graph below compares the trends in employment levels in the USGS against all Federal Civilian employment. The rate of decline in USGS employment has significantly exceeded the rate of decline in the overall Federal workforce. For comparison purposes, USGS FTP employment has declined by 16.2% since 1997 as compared to a 0.9% decline in overall Federal FTP employment.

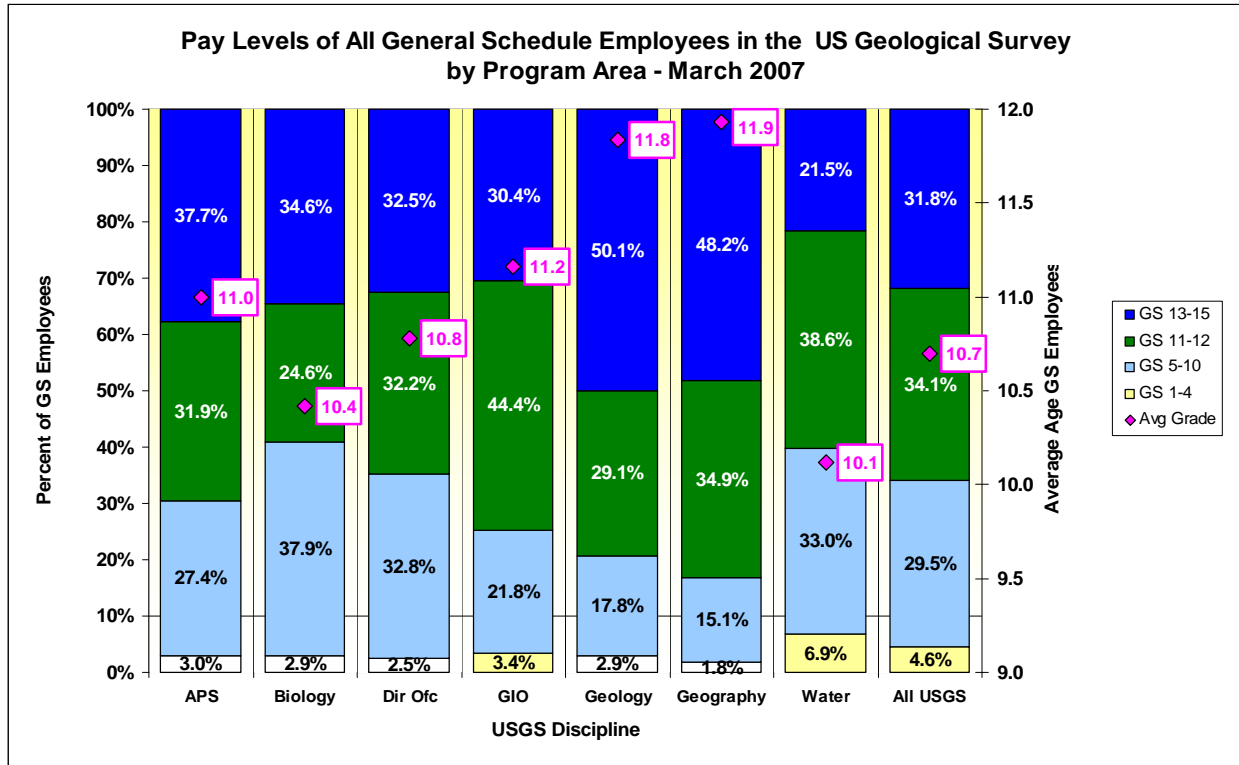


This graph shows Federal and USGS levels of employment on different Y-axes and with different scales, with the USGS employee count reflected on the primary (left) Y-axis, and Federal Civilian employment reflected on the secondary (right) Y-axis using a scale of thousands of employees.

Distribution of USGS Employees by Pay Level

The distribution of employees by pay levels has risen slightly in the last 3 years from 30.6% of employees in grade ranges GS-13-15 in 2005 to 31.8% presently. Correspondingly, the percentage of employees in grade range GS-11-12 and GS-5-10 has decreased slightly reflecting fewer new hires at the lower grades.





Comparison of the percentage of employees within the various pay levels reflects the composition of the workforce necessary to support the various program areas in the USGS. The chart above shows that 37.9 percent and 33 percent of the workforce necessary to perform work associated with biologic and hydrologic programs respectively are at the GS-11 level and below. This reflects the need for a more robust technical staff to perform field and laboratory work in support of research, investigations and data collection and analysis programs.

Ratio of Employees to Supervisors and Managers in the USGS

The supervisory/employee ratio has decreased from 9.3 to 1 in 2001 to 8.8 to 1 in March 2007. Comparing USGS to the Federal Civilian workforce (FCW), as of September 2006, Supervisors and Managers accounted for 10.0% of the USGS workforce and 11.4% of the FCW.

**Ratio All Employees to Supervisors and Managers
All USGS**

	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07
All Active Employees	10,037	10,273	10,154	9,370	9,357	8,906	8,678
Not Supervisor/Manager (Supv Code Not = '2')	9,064	9,344	9,212	8,456	8,446	8,027	7,788
Supervisor/Managers (Supv Code '2')	973	929	942	914	911	879	890
Ratio Non Supervisor/Managers to Supervisor/Managers	9.3	10.1	9.8	9.3	9.3	9.1	8.8
Supervisor/Managers as Percent of Total Active Employees	9.7%	9.0%	9.3%	9.8%	9.7%	9.9%	10.3%

Occupational Categories in the USGS

The importance of the scientific research mission of the USGS is clearly shown when comparing the percentage of employees in the different Occupational Categories (PATCO – Professional, Administrative, Technical, Clerical and Other) to the organization’s total employment.

- The USGS professional workforce consists primarily of scientific and engineering positions, with 97.4% of professionals involved in science occupations as of March 2007. Historically, the percentage of science professionals has grown significantly over time, from 34.5% in 1946, to 92.8% in FY 1987, to 97.4% currently.

Employees in professional science series account for 49.9% of the total USGS workforce. All professionals, both Science and Non-Science, constitute 51.5% of the entire workforce of the USGS.

The USGS employs a much higher percentage of employees in the professional occupational category (51.5%) than other federal agencies do, showing more than twice the percentage of professionals than All Federal Agencies (24.2%), and almost twice the percentage of professional employees in the Department of the Interior - DOI (29.2%).

- The administrative workforce consists of white collar occupations that exercise analytical ability, judgment, and discretion. Positions in the administrative field include budget and financial analysis, human resources, security, and information technology. Administrative employees account for 16.6% of the entire USGS workforce, including 6.2% in computer administrative-related series.

The USGS employs a much smaller percentage of employees in the administrative occupational category (16.6%) than other federal agencies do, showing less than half the percentage of administrative employees than All Federal Agencies (34.5%), and almost half the percentage of DOI (28.6%).

- Technician positions are white collar occupations typically associated with and supportive of a professional or administrative occupational field. USGS occupations that encompass technicians include Hydrologic Technicians, Cartographic Technicians, Physical Science Technicians, and some administrative support positions at the higher grade levels, such as Accounting Technicians, GS-7. Technicians comprise 25.4% of the entire USGS workforce, with science technical series accounting for 19.9% of the USGS workforce, administrative technical series for 5.3%, and computer technical series for 0.4%. Within those USGS Technician positions, Technicians in Science-related occupations comprise 77.7% of all technical positions.
- The USGS employs a larger percentage of employees in Technical occupations (25.4%) than All Federal Agencies (18.1%) or the DOI (20.8%).
- Clerical positions include occupations that perform work in support of office, business or fiscal operations. The clerical category makes up 3.2% of the USGS workforce, including 0.3% in computer-related clerical occupational series.
- The USGS employs less than half the percentage (3.2%) of Clerical employees than All Federal Agencies (8.8%), and almost half the percentage employed by the DOI (5.9%).
- Other White Collar positions are occupations that do not fit into one of the above categories. Within the USGS, all employees in the Other White Collar category are students in the Student Career Experience Program (SCEP). All SCEP appointments make up 2.4% of the USGS workforce, with SCEPs in Science-related positions accounting for 1.9% of the workforce.
- Blue Collar (Wage Grade) occupations include trades, crafts and manual labor positions, and make up 1.0% of the USGS workforce. This percentage is significantly less than in All Federal Agencies (10.9%) and in DOI (12.7%).

The chart below compares the USGS employee PATCO composition to other Interior Bureaus and the Departments of Agriculture and Energy reflecting the high percentage of professional employees who are in the scientific and engineering occupations.

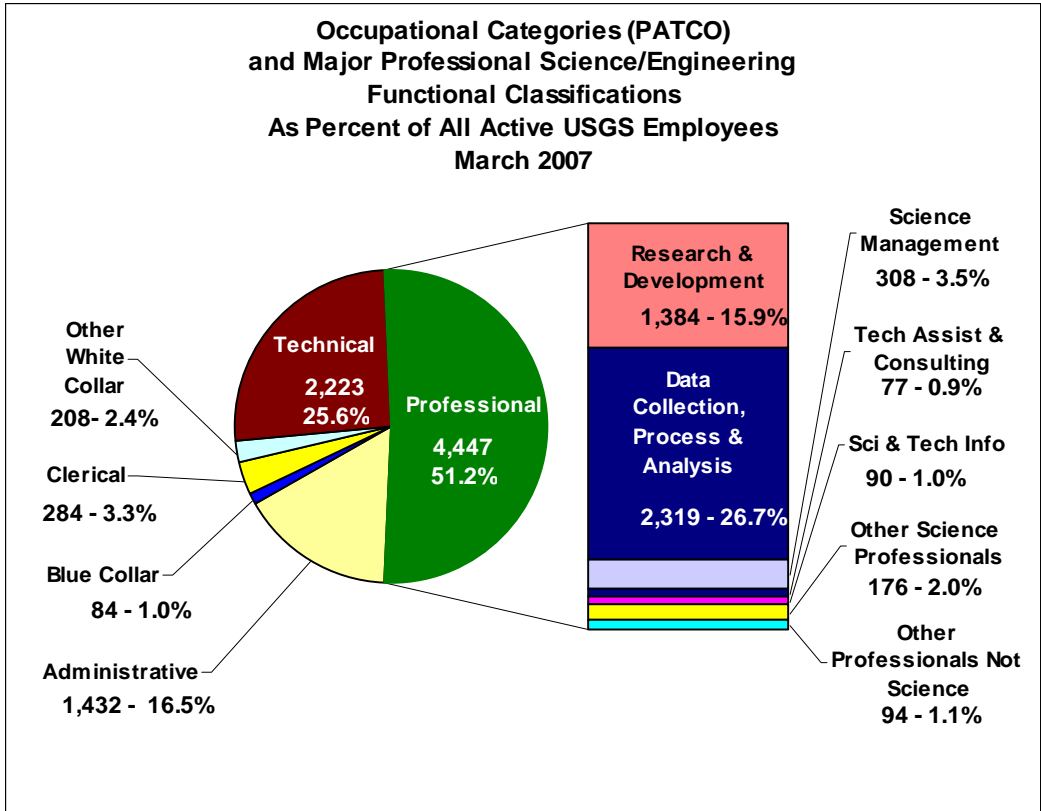
**Occupational Categories (PATCO) as Percentage of All Employees
March 2007**

	Professional	Administrative	Technical	Clerical	Other White Collar	Blue Collar
ALL FEDERAL AGENCIES	24.2%	34.5%	18.1%	8.8%	3.4%	10.9%
Cabinet Level Agencies	24.1%	32.7%	18.4%	9.2%	3.7%	11.8%
DEPARTMENT OF AGRICULTURE	29.2%	22.4%	40.2%	4.8%	0.7%	2.7%
DEPARTMENT OF ENERGY	39.7%	41.1%	5.9%	2.4%	2.8%	8.1%
DEPARTMENT OF THE INTERIOR	29.2%	28.6%	20.8%	5.9%	2.7%	12.7%
DOI - BUREAU OF LAND MANAGEMENT	28.9%	35.4%	24.5%	4.6%	1.6%	4.9%
DOI - BUREAU OF RECLAMATION	27.8%	26.0%	17.8%	7.6%	2.8%	18.1%
DOI - GEOLOGICAL SURVEY	51.5%	16.6%	25.4%	3.2%	2.2%	1.0%
DOI - NATIONAL PARK SERVICE	13.8%	33.8%	17.0%	7.8%	4.4%	23.1%
DOI - U.S. FISH AND WILDLIFE SERVICE	46.6%	22.4%	16.9%	4.2%	0.6%	9.4%
DOI - OFC OF SURFACE MINING, RECL AND ENFORC	30.3%	57.6%	6.4%	4.2%	1.5%	0.0%
DOI - MINERALS MANAGEMENT SERVICE	40.5%	41.1%	11.7%	6.2%	0.5%	0.0%

Date from FedScope at <http://www.fedscope.opm.gov> as of March 2007

Functional Classifications of Science Professionals in the USGS

Functional Classification is a system for describing the kinds of work activities performed by employees in scientific (physical, biological, mathematical, social, computer, and health sciences) or engineering related occupations. Among the Professional Science classifications in the USGS, the largest is the “Data Collection, Processing and Analysis” classification, with 2,319 employees. Next largest is “Research”, with 1,322 employees. Combined with “Development”, the Research and Development functions in the USGS employ 1,384 scientists and engineers as of March 2007.



A review of data since FY 2000 reflects that while the total employee population has decreased and the numbers of scientific professionals has decreased as well, the relative percentage of professionals in each classification category has stayed fairly stable.

Appointment Types in the USGS: Workforce Flexibility

The ability to quickly expand or contract an organization’s workforce as a result of program changes, reduced budgets, etc. is to a degree based upon the type of appointments (permanent, term, or temporary) that make up the workforce. The following chart shows the percentage of permanent appointments to total employment in the USGS. The occupational category that provides the most flexibility in employment for the USGS is Science Technical, where the USGS has traditionally utilized a large student workforce.

Employees on Permanent Appointments, as Percent of Total Workforce (Including SCEP Students)

	FY 1998	FY 2000	FY 2002	FY 2004	FY 2006	Mar-07
Federal Government-wide	90.0%	90.7%	91.0%	90.8%	91.1%	91.6%
Cabinet Level Agencies	90.0%	90.7%	90.9%	90.4%	90.9%	91.4%
Department of the Interior	77.1%	77.0%	77.1%	78.1%	79.4%	83.2%
Bureau of Land Management	83.2%	81.7%	80.9%	82.1%	84.2%	92.6%
Bureau of Reclamation	94.8%	94.0%	94.1%	95.1%	96.6%	96.7%
U.S. Geological Survey	85.1%	86.1%	84.6%	87.6%	86.3%	86.4%
National Park Service	70.3%	69.8%	69.5%	69.8%	71.4%	79.2%
Fish & Wildlife Service	85.0%	87.0%	86.7%	87.1%	88.8%	89.6%
Dept of Agriculture	79.6%	79.9%	79.4%	80.5%	82.4%	86.9%
Dept of Energy	98.0%	97.3%	97.6%	97.9%	97.1%	97.3%

Data from FedScope data mining tool at www.fedscope.opm.gov.

The following table shows the steady decline in the permanent workforce within the Bureau and the slight increase in use of the Term appointment authority which allows for appointments for up to 4 years in duration for short term project needs. The use of temporary appointments for 1 year or less has slightly declined over the last 6 years. The USGS has very few seasonal work schedules, instead depending on Temporary appointments to meet field season requirements.

Appointment Types in the US Geological Survey

	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07
Full Time Permanent (FTP) *	8,191	8,253	8,185	7,879	7,763	7,357	7,113
Seasonal Employment	5	6	4	5	5	5	7
Permanent (All Work Schedules)	8,671	8,765	8,669	8,298	8,181	7,713	7,464
Temporary (All Work Schedules)	771	916	883	502	614	629	598
Term (All Work Schedules)	595	592	602	570	562	564	616
TOTAL	10,037	10,273	10,154	9,370	9,357	8,906	8,678
Full Time Permanent (FTP)	81.6%	80.3%	80.6%	84.1%	83.0%	82.6%	82.0%
Seasonal Employment	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%
Permanent (All Work Schedules)	86.4%	85.3%	85.4%	88.6%	87.4%	86.6%	86.0%
Temporary (All Work Schedules)	7.7%	8.9%	8.7%	5.4%	6.6%	7.1%	6.9%
Term (All Work Schedules)	5.9%	5.8%	5.9%	6.1%	6.0%	6.3%	7.1%

* Full Time Work Schedule and Permanent Type of Appointment

Student Employment in the USGS

Students are a major pipeline for the future workforce of USGS. Student employment has proven to be effective for acquiring needed skills, for expanding our applicant pools throughout the Bureau, and for improving the diversity of our workforce. It has also benefited the Bureau by serving as a key means for increasing awareness of the USGS and our mission nationwide.

Student employment has ranged from a current 6.4% of the employee workforce to as much as 8.5% of our workforce in 2001. While students are hired in positions representing the full range of occupations within USGS, the majority are hired within the scientific occupations.

The Aging of the Workforce

As of the end of FY 2006, the average age of FTP USGS employees is generally higher, at 48.7, than the 47.0 average age of FTP Federal civilian employees. An analysis of rising average employee ages in particular occupational groupings usually reflects limited hiring of new staff over the years due to decreasing budget or Full Time Equivalent (FTE) allocations, changes in program direction, and/or the increased utilization of contract staff.

Average Age of Permanent Appointment Employees on Full Time Work Schedules											
USGS Science and Non-Science Series	FY 1990	FY 1992	FY 1994	FY 1996	FY 1998	FY 2000	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Hourly / Wage Grade	43.5	45.1	45.2	45.7	45.6	46.8	48.4	48.3	48.4	47.8	49.5
Non-Science	42.8	43.5	43.9	44.8	45.3	46.6	47.6	47.9	48.1	48.4	48.9
Science	43.4	43.7	43.9	44.4	45.1	45.9	46.6	47.2	47.4	47.9	48.6
All USGS	43.2	43.7	43.9	44.5	45.1	46.2	46.9	47.4	47.6	48.0	48.7
Federal Civilian Workforce	42.3	43.0	44.1	44.8	45.6	46.3	46.5	46.7	46.8	46.9	47.0

USGS data from the Federal Payroll and Personnel System. Federal Civilian Workforce data from OPM [Fact Books](#).

Generational Groups

The use of Generational Groupings to help develop employee programs that attract and retain quality employees has become a prevalent approach in industry and the Federal Government. The chart below reflects the large Baby Boomer population in the USGS and clearly shows the lack of employees in the Generation X and Y groups who will be available to move into the vacated positions when the Boomers retire. The USGS has implemented a number of family friendly programs such as alternative work schedules,

flexi-place, etc. in order to meet the changing expectations of the younger workforce and continues to assess recruitment and retention strategies for the future.

Generational Groups in the USGS	
March 31, 2007	
% Veterans	6.1%
% Baby Boomers	61.2%
% Generation X	26.9%
% Geneation Y - Millenials	5.8%

Education Level of USGS Employees

Reflecting the scientific mission of the Bureau, 72.6% of all USGS employees possess a Bachelor's Degree or higher as compared to 43.1% of the overall Federal employee population.

Staffing Trends

Attrition and Accession Rates in the DOI and USGS

DOI has an overall attrition (all separations) rate of 23.9% of all active employees and 8.0% of FTP employees for fiscal years 2005 and 2006. The USGS has an overall attrition rate of 14.0% of all active employees and 7.3% of FTP employees (against 8.0% for DOI) for fiscal years 2005 and 2006. The USGS has traditionally had a relatively stable workforce.

Science professionals in the USGS have an overall attrition rate of 7.6% (compared against the USGS rate of 14.0%) of all active employees and 5.3% (against 7.3% for USGS) of FTP science professional employees for fiscal years 2005 and 2006.

Retirement Eligibility by Pay Level in the USGS

Retirement eligibility numbers are often used for workforce planning purposes to predict how many employees will retire. Percentages of 20% or over are highlighted in orange in the table below, and show the potential for high turnover in an aging employee population.

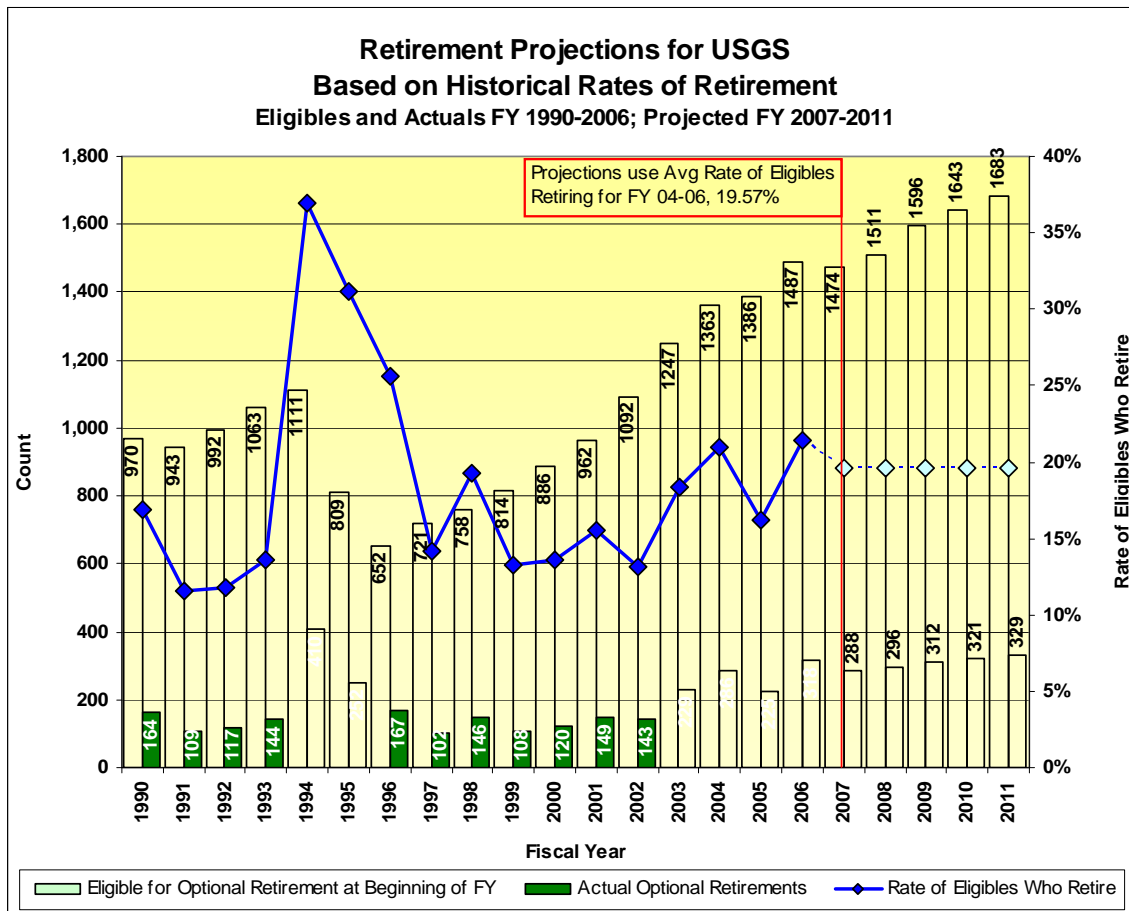
RETIREMENT ELIGIBILITY - PERCENTAGES									
All USGS Employees									
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible	Total
GS 1-4	388	0.5%	0.8%	0.8%	0.8%	1.0%	12.9%	87.1%	100%
GS 5-10	2,515	7.4%	9.6%	12.2%	15.0%	17.6%	85.5%	14.5%	100%
GS 11-12	2,906	12.4%	16.0%	20.2%	24.3%	28.5%	98.7%	1.3%	100%
GS 13-15	2,710	26.1%	31.7%	37.7%	43.3%	49.1%	99.0%	1.0%	100%
ALL GENERAL SCHEDULE	8,519	14.7%	18.4%	22.5%	26.5%	30.6%	91.0%	9.0%	100%
WB/WM 00	12	25.0%	25.0%	50.0%	50.0%	58.3%	100.0%	0.0%	100%
W/X 1-4	11	0.0%	0.0%	0.0%	9.1%	9.1%	72.7%	27.3%	100%
W/X 5-10	51	19.6%	19.6%	29.4%	31.4%	35.3%	98.0%	2.0%	100%
W/X 11-12	9	0.0%	22.2%	33.3%	33.3%	44.4%	100.0%	0.0%	100%
W/X 13-15	1	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100%
ALL BLUE COLLAR 1-15	72	15.3%	18.1%	26.4%	29.2%	33.3%	94.4%	5.6%	100%
Exec - EX	1	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100%
Exec - EH	3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100%
SES	27	51.9%	51.9%	59.3%	66.7%	74.1%	100.0%	0.0%	100%
SL	10	60.0%	60.0%	60.0%	70.0%	80.0%	100.0%	0.0%	100%
ST	34	76.5%	79.4%	79.4%	82.4%	85.3%	100.0%	0.0%	100%
All USGS	8,678	15.2%	18.8%	23.0%	26.9%	31.0%	91.0%	9.0%	100%

Actual Retirement Rates in the USGS

While significant numbers and percentages of employees are eligible for Optional retirement, and increasing numbers will become eligible in the coming years, historic rates of actual retirements of those eligible for immediate retirement indicate that not all employees will immediately choose to exercise their retirement options. Although the rate of retirement eligibles choosing optional retirement in the USGS was 16.2% in FY 2005, 21.4% in FY 2006, and 13.7% by March 30th in FY 2007, the average retirement rate of eligibles opting retirement for FY 2004 through 2006 was 19.6%.

Within the USGS, Science Professionals make up 49.9% (March 2007) of the workforce. Within the Science Professionals category, 14.4% of those eligible for retirement actually retired in FY 2005, 17.6% in FY 2006, and 10.5% by March 30th in FY 2007, with an average retirement rate for FY 2004 through 2006 of 15.8%.

Retirement rates across the Federal Government have been falling. In Fiscal Year 2002, about 20% fewer employees retired across the Federal Government than were predicted. A General Accountability Office (GAO) review of retirement trends in 2001 found that federal employees are waiting longer to retire after they become eligible. In 1997, 21% of workers who were eligible to retire that year actually did so, compared to 40% in Fiscal Year 1988. While an increasing number of retirement eligibles seem to have been waiting to retire, an upturn in the economy may encourage more eligibles to retire as their retirement fund plans recover.



Retirement: Length of Eligibility before Retirement

USGS experience predicting retirement has shown that retirement eligibility to project retirements has not proven to be effective. Retirement rates change according to the mix of employees' types of retirement plan coverage, the economy, the stock market, Bureau funding and budgets, and other often unpredictable factors. Retirement projections can be created using historic retirement rates, but creating historic rates for specific sub-groups is a cumbersome process. As a result, the USGS is experimenting with a third method of creating retirement projections: using historic Length of Eligibility (LOE) numbers.

Under the federal retirement system, employees become eligible to retire when they meet specific age and length of Length of Service (LOS) requirements. Based on these specific requirements, a LOE can be determined to use for retirement projections. The "Average LOE" is the average Length of Service performed between the time employees first become eligible to retire and when they actually do retire. In the Federal Government, the average LOE fell from 3.2 years in FY 1999 and 2000 to 3.1 in 2001 and 3.0 in 2003 and 2004. However, it rose again to 3.2 in FY 2005.

Within the USGS, the average LOE fell between FY 1999 and 2001 from 3.0 to 2.8, but rose back up to 3.0 in 2002 and to 3.1 in 2003. In FY 2004, the average USGS LOE went up to 3.4, then down to 3.2 in 2005, and up to a high of 3.9 in FY 2006.

The average LOE varies fairly widely across Occupational Categories (PATCO). In FY 2005, in the Federal Government, those in Professionals positions stayed an average of 3.8 years beyond date of eligibility; Administrative and Technical positions stayed 2.9 and 3.2; Clerical positions stayed 3.5; and Blue Collar positions stayed an average of 2.6 years beyond their date of retirement eligibility (OPM Retirement Statistics).

The average LOE for the USGS within the PATCO categories is generally shorter than for the Federal Government. That is, employees retire sooner after becoming eligible in the USGS than in the Federal Government as a whole. Only USGS Professional employees have a longer length of eligibility than Federal employees: 4.0 compared to 3.8, or 0.2 years longer.

Within the USGS, there are large differences between the LOEs of Science and Non-Science occupational series. For instance, in FY 2006 Non-Science Professionals had an average LOE of 3.2 while Science Professionals had an LOE of 4.7, for a difference of 1.5 years. Technical Non-Science had an LOE of 3.2 while Technical Science had an LOE of 4.2, for a difference of 1 year.

Length of Eligibility of Optional / Voluntary (NOAC 302) Retirees USGS Professional & Technical, Science and Non-Science										
Occupational Category	USGS Occupational Series: Science & Non-Science	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Average Last 3 FY
Professional	Non-Science	5.4	0.8	*	1.5	1.2	2.8	6.9	3.2	4.7
	Science	3.6	3.6	2.9	3.4	3.6	4.1	3.8	4.7	4.2
Professional Total		3.6	3.5	2.9	3.3	3.5	4.1	4.0	4.7	4.3
Technical	Non-Science	0.8	1.6	3.2	1.9	2.3	2.6	1.6	3.2	2.6
	Science	2.5	3.2	4.0	3.6	3.2	3.9	2.5	4.2	3.6
Technical Total		2.1	2.7	3.8	3.0	2.9	3.5	2.3	3.8	3.3

* No Non-Science Professionals retired in FY 2001.

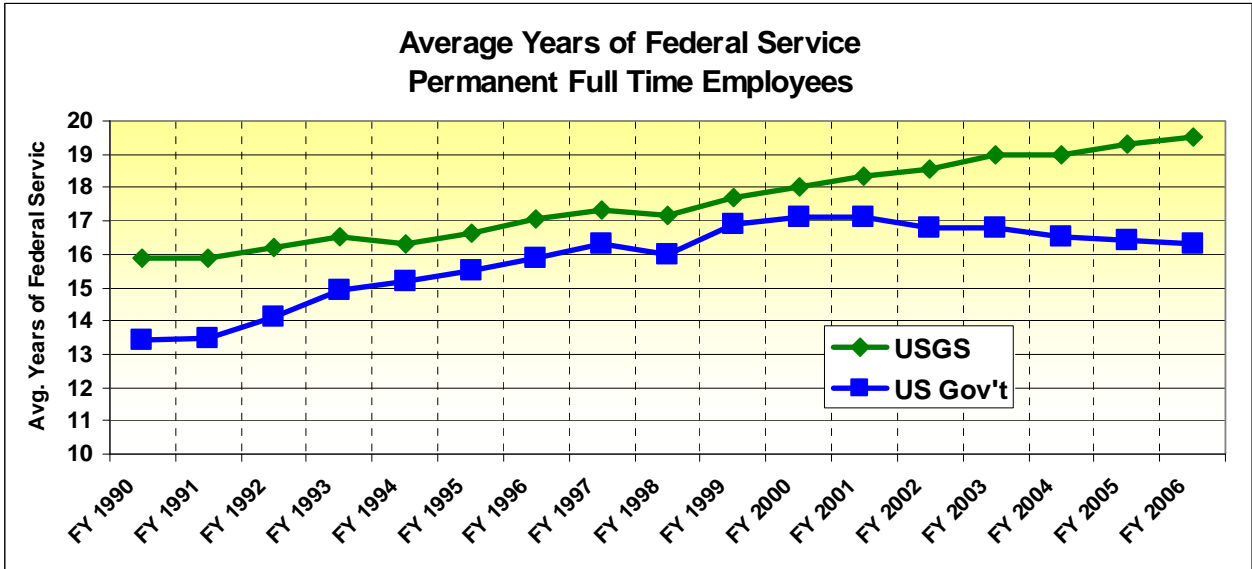
A comparison of the following table showing retirement projections (with percentages of 20% or over highlighted in red) with the preceding table showing retirement eligibility (with percentages of 20% or over highlighted in gold) shows less need for immediate concern. For instance, 31.7% of GS 13-15 will be eligible to retire by the end of FY 2008, but projections show that only 12.6% will actually retire by the end of FY 2008. For SES, SL and ST employees, 51.9%, 60% and 76.5% are eligible to retire by the end of FY 2007, but only 14.8%, 20%, and 44.1% are projected to actually retire. While these percentages of projected retirements are still significant, this allows for more time for succession and program planning than the eligibility numbers would indicate.

RETIREMENT PROJECTION - PERCENTAGES
All USGS Employees
(Based on Avg. USGS' Occupational Category LOEs)

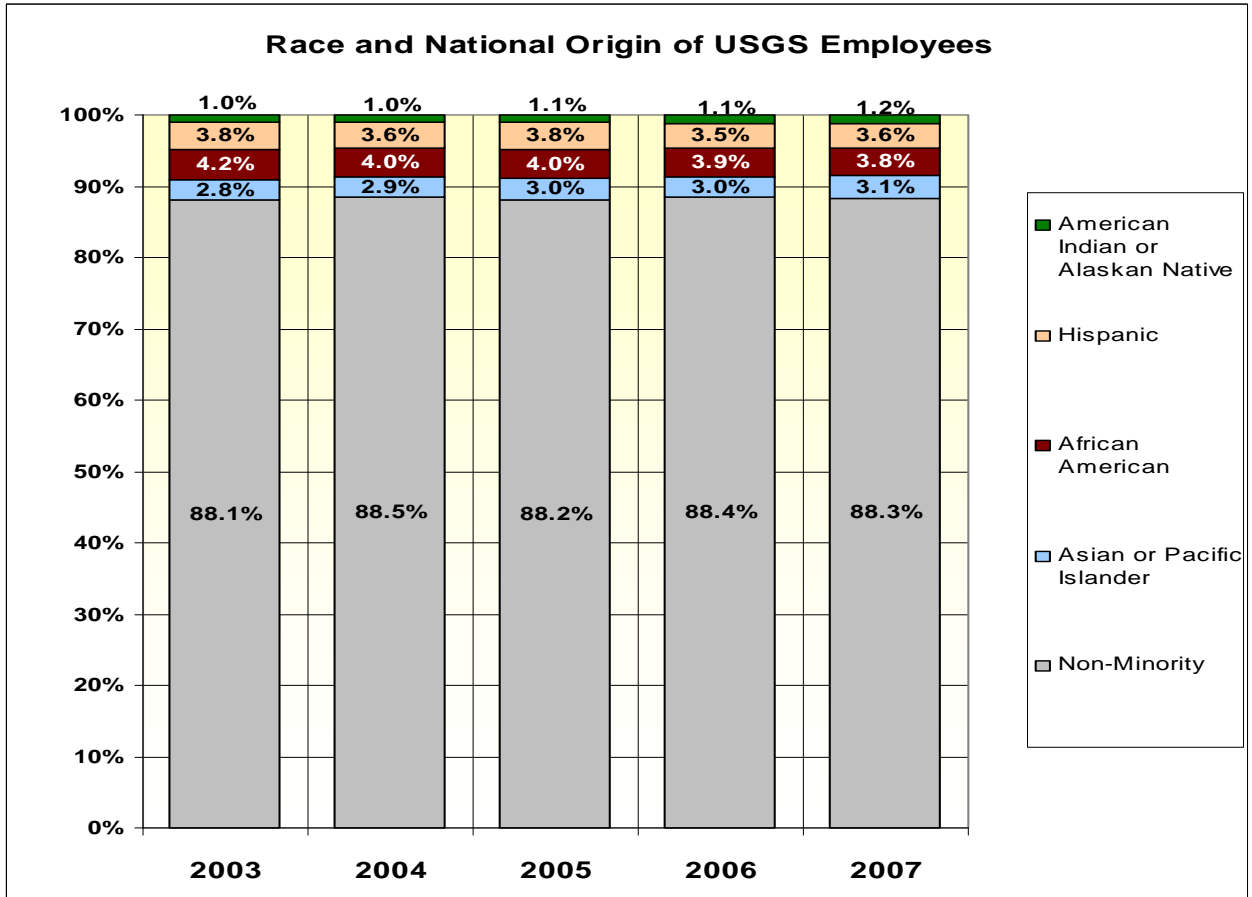
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible	Total
GS 1-4	388	0.0%	0.3%	0.3%	0.5%	0.5%	12.9%	87.1%	100%
GS 5-10	2,515	3.1%	4.0%	5.4%	7.1%	9.5%	85.5%	14.5%	100%
GS 11-12	2,906	4.7%	6.2%	8.1%	10.9%	14.1%	98.7%	1.3%	100%
GS 13-15	2,710	8.9%	12.6%	16.6%	21.5%	26.6%	99.0%	1.0%	100%
ALL GENERAL SCHEDULE	8,519	5.4%	7.3%	9.7%	12.7%	16.1%	91.0%	9.0%	100%
WB/WM 00	12	16.7%	16.7%	25.0%	25.0%	50.0%	100.0%	0.0%	100%
W/X 1-4	11	0.0%	0.0%	0.0%	0.0%	0.0%	72.7%	27.3%	100%
W/X 5-10	51	13.7%	15.7%	19.6%	21.6%	29.4%	98.0%	2.0%	100%
W/X 11-12	9	0.0%	0.0%	11.1%	22.2%	33.3%	100.0%	0.0%	100%
W/X 13-15	1	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100%
ALL BLUE COLLAR 1- 15	72	11.1%	12.5%	16.7%	19.4%	26.4%	94.4%	5.6%	100%
Exec - EX	1	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100%
Exec - EH	3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100%
SES	27	14.8%	18.5%	22.2%	33.3%	51.9%	100.0%	0.0%	100%
SL	10	20.0%	20.0%	40.0%	40.0%	60.0%	100.0%	0.0%	100%
ST	34	44.1%	47.1%	55.9%	70.6%	76.5%	100.0%	0.0%	100%
All USGS	8,678	5.6%	7.6%	10.0%	13.1%	16.6%	91.0%	9.0%	100%

The Increasing Length of Federal Government Service

The Average Length of Federal Government Service (LOS) in September 2006 of Full Time employees with Permanent appointments was more than three years longer for the USGS (19.5 years) than for Federal Civilian Employees in general (16.3 years), and 1.8 years longer than in DOI (17.7). The average LOS for all employees was also higher in the USGS (17.6 years) than Government-wide (15.1 years) or in DOI (15.2), with a difference of 2.5 and 2.4 years. While the LOS for employees in the USGS has been increasing, that of Federal Civilian Employees has been decreasing, but at a lesser rate.



Diversity Data for the USGS



The diversity representation within the USGS employee population, while generally remaining stable in a declining workforce, has continued to be below the percentage of the general Federal employee population. The American Indian/Alaska Native and Hispanic population is approximately one-half of the Federal percentage of 2.1% and 7.5%, respectively, and slightly greater than one-half of the Asian/Pacific Islander Federal percentage of 5.3%. The African American employee population in the USGS is significantly lower than the Federal percentage of 17.2%. In comparison to other scientific agencies such as the NASA, National Oceanic and Atmospheric Administration, and the National Institute of Standards and Technology, the USGS is on par or slightly higher in the employment of American Indian/Alaskan Native and Hispanic/Latino employees but lags behind in the employment of Asians and Black/African Americans. The USGS continues to partner with various colleges and universities with large populations of underrepresented students to encourage the pursuit of scientific degrees and arrange student employment opportunities.

Disabled Employment in the USGS

The percentage of employees in the USGS with targeted disabilities has fallen by 0.1%, from 1.2% to 1.1%, from March 2003 to March 2007. The employee population of individuals with non-targeted disabilities has fallen 0.2%, from 5.2% to 5.0%, during the same time frame.

Gender in the USGS

The USGS population is comprised of 62.5% men and 37.5% women as compared to 55.8% men and 44.2% women in the Federal civilian workforce. Generally the population of men and women in the Bureau has remained stable over the past 6 years.

Gender in the USGS					
	Mar-01	Mar-03	Mar-05	Mar-06	Mar-07
Female	3,733	3,788	3,504	3,341	3,256
Male	6,304	6,366	5,853	5,565	5,422
TOTAL	10,037	10,154	9,357	8,906	8,678
% Female	37.2%	37.3%	37.4%	37.5%	37.5%
% Male	62.8%	62.7%	62.6%	62.5%	62.5%

MISSION CRITICAL OCCUPATIONS

As part of the workforce analysis, Bureaus were asked to include a general analysis of the demographics of the workforce that may impact the organization's ability to recruit, hire, develop and retain needed employees. The following analysis addresses occupations that are identified as mission critical occupations (MCO) for the Department in addition to occupations that are important to the mission of the USGS.

Wildlife Biologists (DOI MCO)

- According to the Partnership For Public Service's Where the Jobs Are: Mission Critical Opportunities for America (2007 ed.), using FY 2006 data, DOI Wildlife Biologists were on average 45 years old, 11% were eligible to retire in FY 2007, and 26% by FY2010. Wildlife Biologists had a .21% net hire ratio¹ for FY 2006 (20 hires to 94 separations). The report projected hires for FY 2007-09 of 75 Wildlife Biologists.
- According to data in the Federal Payroll and Personnel System (FPPS) for March 2007, USGS Wildlife Biologists are on average 49.8 years old, 22.0% are eligible to retire by the end of FY 2007 and 33.6% by the end of FY 2010, and had a net hire ratio of .50 for FY 2006 (10 hires to 20 separations) for all Wildlife Biologists, and a net hire ratio of .30 for FY 2006 (3 hires to 10 separations) for FTP Wildlife Biologists. Turnover² rates for FY 2006 were 8.7% for all and 5.2% for FTP Wildlife Biologists.
- Historically, 11.3% of eligible Wildlife Biologists have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 8.7% in FY 2005 to a high of 14.5% in FY 2006.
- Based on historic LOE, 7.9% of USGS Wildlife Biologists are projected to retire by the end of FY 2007 and 9.8% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES								
All USGS 0486-Wildlife Biologist								
(Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	25	0.0%	0.0%	0.0%	0.0%	0.0%	84.0%	16.0%
GS 11-12	58	1.7%	1.7%	1.7%	3.4%	3.4%	100.0%	0.0%
GS 13-15	131	12.2%	15.3%	19.8%	24.4%	32.8%	99.2%	0.8%
ALL GENERAL SCHEDULE	214	7.9%	9.8%	12.6%	15.9%	21.0%	97.7%	2.3%

- The average age of USGS Wildlife Biologists has risen from 46.8 in March 2003 to 49.8 in March 2007. The 61 and Over age range has increased from 6.4% to 12.4% (+6.0%), while the 51 to 60 age range has increased from 34.3% to 41.5% (+7.2%), and

¹ Net Hire Ratios show whether an organization's workforce is expanding or contracting. A Net Hire Ratio of less than one indicates fewer new hires than separations, and would be observed in an organization undergoing downsizing. A Net Hire Ratio greater than one shows more hires than separations, and would be observed in a growing organization.

² Turnover represents total separations divided by average employment (beginning and end of fiscal year).

the 41 to 50 age range has decreased from 31.5% to 26.7% (-4.8%). The 31 to 40 age range has decreased 2.8% (decreasing from 19.9% to 17.1%), and the 30 and under age range has decreased 5.7% (decreasing from 8.0% to 2.3%). Of all Wildlife Biologists, 66.8% are Baby Boomers, followed by 22.1% Generation X and 11.1% Veterans.

- The average grade of USGS Wildlife Biologists has risen from 11.8 in March 2003 to 12.3 in March 2007. The GS 13-15 grade range has increased from 54.1% to 61.2% (+7.1%), while the GS 11-12 grade range has increased from 23.6% to 27.1% (+3.5%), and the GS 5-10 grade range has decreased from 22.4% to 11.7% (-10.7%).
- As of March 2007, almost 9% of USGS Senior Scientists (Scientific and Professional Pay Category – STs) are Wildlife Biologists.
- The majority of USGS Wildlife Biologists work under a Maxiflex work schedule (64.5%), with 32.7% listed as “Not Applicable”. Only 2.8% work under a 5-4/9 Workweek.

General Biologist (DOI MCO)

- According to the Partnership For Public Service’s Where the Jobs Are: Mission Critical Opportunities for America (2007 ed.), using FY 2006 data, DOI General Biologists were on average 45 years old, 10% were eligible to retire in FY 2007, and 26% by FY 2010. General Biologists had a .44 net hire ratio for FY 2006 (132 hires to 302 separations). The report projected hires for FY 2007-09 of 171 General Biologists.
- According to data in the FPPS for March 2007, USGS General Biologists are on average 44.8 years old, 11.0% are eligible to retire by the end of FY 2007 and 13.9% by the end of FY 2010, and had a net hire ratio of .86 for FY 2006 (25 hires to 29 separations) for all General Biologists, and a net hire ratio of .60 for FY 2006 (6 hires to 10 separations) for FTP General Biologists. Turnover rates for FY 2006 were 11.1% for all and 5.2% for FTP General Biologists.
- Historically, 19.2% of eligible General Biologists have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 16.1% in FY 2004 to a high of 22.6% in FY 2005.
- Based on historic LOE, 2.4% of USGS General Biologists are projected to retire by the end of FY 2007 and 3.7% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES All USGS 0401-General Biologist (Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	64	0.0%	0.0%	0.0%	0.0%	1.6%	87.5%	12.5%
GS 11-12	77	0.0%	0.0%	0.0%	0.0%	0.0%	98.7%	1.3%
GS 13-15	104	5.8%	8.7%	11.5%	16.3%	21.2%	100.0%	0.0%
ALL GENERAL SCHEDULE	245	2.4%	3.7%	4.9%	6.9%	9.4%	96.3%	3.7%

- The average age of USGS General Biologists has risen slightly from 44.0 in March 2003 to 44.8 in March 2007. The 61 and over age range has decreased from 4.5% to 3.6% (-0.9%), the 51 to 60 age range has increased from 28.7% to 30.7% (+2.0%), and the 41 to 50 age range has increased from 22.1% to 30.3% (+8.2%). The 31 to 40 age range has decreased 6.1% (decreasing from 32.4% to 26.3%), and the 30 and under age range has decreased 3.1% (decreasing from 12.3% to 9.2%). Of all General Biologists, 58.6% are Baby Boomers, followed by 35.1% Generation X, 3.6% Veterans, and 2.8% Generation Y.
- The average grade of USGS General Biologists has risen from 11.4 in March 2003 to 11.6 in March 2007. The GS 13-15 grade range has increased from 40.3% to 42.4% (+2.1%), while the GS 11-12 grade range has increased from 28.8% to 31.4% (+2.6%), and the GS 5-10 grade range has decreased from 30.9% to 26.1% (-4.8%).
- As of March 2007, 14.8% of USGS Senior Executive Service (SES) member positions and 20% of USGS Senior Level (SLs) positions are encumbered by General Biologists.
- The majority of USGS General Biologists work under a Maxiflex work schedule (78.1%), with 19.9% listed as "Not Applicable". Only 0.4% work under 4-10 Hour Days schedules, and 1.2% on a 5-4/9 Workweek. One employee (0.4%) works a Rotating Shift schedule.

Hydrologists (DOI MCO)

- According to the Partnership For Public Service's Where the Jobs Are: Mission Critical Opportunities for America (2007 ed.), using FY 2006 data, DOI Hydrologists were on average 46 years old, 9% were eligible to retire in FY 2007, and 27% by FY 2010. Hydrologists had a .18 net hire ratio for FY 2006 (20 hires to 112 separations). The report projected hires for FY 2007-09 of 93 Hydrologists.
- According to data in the FPPS for March 2007, USGS Hydrologists are on average 46.7 years old, 12.1% are eligible to retire by the end of FY 2007 and 16.3% by the end of FY 2010, and had a net hire ratio of .20 for FY 2006 (21 hires to 105 separations) for

all Hydrologists, and a net hire ratio of .07 for FY 2006 (6 hires to 86 separations) for FTP Hydrologists. Turnover rates for FY 2006 were 6.9% for all and 6.3% for FTP Hydrologists.

- Historically, 19.3% of eligible Hydrologists have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 16.4% in FY 2005 to a high of 23.6% in FY 2006.
- Based on historic LOE, 2.5% of USGS Hydrologists are projected to retire by the end of FY 2007 and 4.2% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES								
All USGS 1315-Hydrologist								
(Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	133	0.0%	0.0%	0.0%	0.8%	0.8%	94.0%	6.0%
GS 11-12	686	2.0%	2.5%	3.5%	5.0%	7.3%	99.4%	0.6%
GS 13-15	638	3.6%	6.9%	9.4%	12.9%	18.2%	99.1%	0.9%
ALL GENERAL SCHEDULE	1457	2.5%	4.2%	5.8%	8.0%	11.5%	98.8%	1.2%

- The average age of USGS Hydrologists has risen from 44.9 in March 2003 to 46.7 in March 2007. The 61 and over age range has increased from 2.9% to 3.5% (+0.6%), the 51 to 60 age range has increased from 24.3% to 36.5% (+12.2%), and the 41 to 50 age range has decreased from 43.6% to 35.3% (-8.3%). The 31 to 40 age range has decreased 2.7% (decreasing from 21.9% to 19.2%), and the 30 and under age range has decreased 1.8% (decreasing from 7.3% to 5.5%). Of all Hydrologists, 69.7% are Baby Boomers, followed by 26.5% Generation X, 3.1% Veterans, and 0.7% Generation Y.
- The average grade of USGS Hydrologists has risen from 12.1 in March 2003 to 12.2 in March 2007. The GS 13-15 grade range has increased from 41.4% to 43.8% (+2.4%), while the GS 11-12 grade range has decreased from 47.3% to 47.1% (-0.2%), and the GS 5-10 grade range has decreased from 11.3% to 9.1% (-2.2%).
- As of March 2007, 7.4% of USGS SES are Hydrologists, as are 3% of USGS SLs and 29.4% of STs.
- The majority of USGS Hydrologists work under a Maxiflex work schedule (72.1%), with 27.0% listed as "Not Applicable". Only 0.1% work under 4-10 Hour Days schedules, 0.4% on a 5-4/9 Workweek, and 0.1% on a 3-Day Workweek. Four employees (0.3%) work a First 40 work schedule.

Geologists (DOI MCO)

- According to the Partnership For Public Service's Where the Jobs Are: Mission Critical Opportunities for America (2007 ed.), using FY 2006 data, DOI Geologists were on average 51 years old, 24% were eligible to retire in FY 2007, and 51% by FY 2010. Geologists had a .27 net hire ratio for FY 2006 (23 hires to 86 separations). The report projected hires for FY 2007-09 of 63 Geologists.
- According to data in the FPPS for March 2007, USGS Geologists are on average 51.2 years old, 29.4% are eligible to retire by the end of FY 2007 and 34.6% by the end of FY 2010, and had a net hire ratio of .41 for FY 2006 (20 hires to 49 separations) for all Geologists, and a net hire ratio of .14 for FY 2006 (4 hires to 29 separations) for FTP Geologists. Turnover rates for FY 2006 were 8.1% for all and 5.8% for FTP Geologists.
- Historically, 11.3% of eligible Geologists have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 7.8% in FY 2004 to a high of 12.8% in FY 2005.
- Based on historic LOE, 10.1% of USGS Geologists are projected to retire by the end of FY 2007 and 13.7% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES All USGS 1350-Geologist (Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	30	0.0%	0.0%	0.0%	0.0%	0.0%	86.7%	13.3%
GS 11-12	182	4.4%	4.9%	6.6%	8.8%	13.7%	95.6%	4.4%
GS 13-15	374	13.6%	19.0%	27.3%	34.8%	38.2%	97.9%	2.1%
ALL GENERAL SCHEDULE	586	10.1%	13.7%	19.5%	24.9%	28.7%	96.6%	3.4%

- The average age of USGS Geologists has risen from 49.7 in March 2003 to 51.2 in March 2007. The 61 and over age range has increased from 12.2% to 14.1% (+1.9%), the 51 to 60 age range has increased from 40.4% to 47.5% (+7.1%), and the 41 to 50 age range has decreased from 30.3% to 20.9% (-9.4%). The 31 to 40 age range has increased 3.9% (increasing from 10.9% to 14.8%), and the 30 and under age range has decreased 3.5% (decreasing from 6.2% to 2.7%). Of all Geologists, 67.2% are Baby Boomers, followed by 19.5% Generation X, 13.0% Veterans, and 0.3% Generation Y.
- The average grade of USGS Geologists has risen from 12.9 in March 2003 to 13.0 in March 2007. The GS 13-15 grade range has decreased from 65.2% to 63.8% (-1.4%), while the GS 11-12 grade range has increased from 27.4% to 31.1% (+3.7%), and the GS 5-10 grade range has decreased from 7.4% to 5.1% (-2.3%).
- As of March 2007, 11.1% of USGS SES are Geologists, as are 14.7% of STs.

- The majority of USGS Geologists work under a Maxiflex work schedule (92.9%), with 5.2% listed as “Not Applicable”. Only 1.2% work under 4-10 Hour Days schedules, and 0.5% on a 5-4/9 Workweek. One employee (0.2%) works a First 40 work schedule.

Geographers

- According to data in the FPPS for March 2007, USGS Geographers are on average 45.1 years old, 6.1% are eligible to retire by the end of FY 2007, and 8.8% by the end of FY 2010. Geographers had a net hire ratio of .35 for FY 2006 (8 hires to 23 separations) for all Geographers, and a net hire ratio of .00 for FY 2006 (0 hires to 12 separations) for FTP Geographers. Turnover rates for FY 2006 were 14.6% for all and 9.6% for FTP Geographers.
- Historically, 21.4% of eligible Geographers have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 14.3% in FY 2004 to a high of 26.7% in FY 2006.
- Based on historic LOE, 1.4% of USGS Geographers are projected to retire by the end of FY 2007 and 2.0% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES								
All USGS 0150-Geographer								
(Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	21	0.0%	0.0%	0.0%	0.0%	0.0%	95.2%	4.8%
GS 11-12	75	1.3%	1.3%	1.3%	1.3%	2.7%	100.0%	0.0%
GS 13-15	51	2.0%	3.9%	7.8%	7.8%	13.7%	92.2%	7.8%
ALL GENERAL SCHEDULE	147	1.4%	2.0%	3.4%	3.4%	6.1%	96.6%	3.4%

- The average age of USGS Geographers has risen from 41.9 in March 2003 to 45.1 in March 2007. The 61 and over age range has increased from 2.0% to 3.4% (+1.4%), the 51 to 60 age range has increased from 21.6% to 27.7% (+6.1%), and the 41 to 50 age range has increased from 32.7% to 37.8% (+5.1%). The 31 to 40 age range has decreased 4.5% (decreasing from 26.1% to 14.8%), and the 30 and under age range has decreased 8.1% (decreasing from 17.6% to 9.5%). Of all Geographers, 60.8% are Baby Boomers, followed by 34.5% Generation X.
- The average grade of USGS Geographers has risen from 11.1 in March 2003 to 11.6 in March 2007. The GS 13-15 grade range has increased from 25.0% to 34.7% (+9.7%), while the GS 11-12 grade range has increased from 46.1% to 51.0% (+4.9%), and the GS 5-10 grade range has decreased from 28.9% to 14.3% (-14.6%).

- The majority of USGS Geographers work under a Maxiflex work schedule (78.4%), with 19.6% listed as “Not Applicable”. Only 1.4% work under 4-10 Hour Days schedules, and 0.7% on a 5-4/9 Workweek.

Civil Engineers (DOI MCO)

- According to the Partnership For Public Service’s Where the Jobs Are: Mission Critical Opportunities for America (2007 ed.), using FY 2006 data, DOI Civil Engineers were on average 47 years old, 13% were eligible to retire in FY 2007, and 30% by FY2010. Civil Engineers had a .50 net hire ratio for FY 2006 (37 hires to 74 separations). The report projected hires for FY 2007-09 of 36 Civil Engineers.

- According to data in the FPPS for March 2007, USGS Civil Engineers are on average 41.6 years old, 17.6% are eligible to retire by the end of FY 2007 and 17.6% by the end of FY 2010. Civil Engineers had a net hire ratio of .17 for FY 2006 (1 hire to 6 separations) for all Civil Engineers, and a net hire ratio of .00 for FY 2006 (0 hires to 5 separations) for FTP Civil Engineers. Turnover rates for FY 2006 were 27.9% for all and 34.5% for FTP Civil Engineers.

- Historically, 16.7% of eligible Civil Engineers have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 0.0% in FY 2004 to a high of 25.0% in FY 2005 and 2006.

- Based on historic LOE, 5.9% of USGS Civil Engineers are projected to retire by the end of FY 2007 and 11.8% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES All USGS 0810-Civil Engineer (Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	6	0.0%	0.0%	0.0%	0.0%	0.0%	83.3%	16.7%
GS 11-12	3	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
GS 13-15	8	12.5%	25.0%	25.0%	37.5%	37.5%	100.0%	0.0%
ALL GENERAL SCHEDULE	17	5.9%	11.8%	11.8%	17.6%	17.6%	94.1%	5.9%

- The average age of USGS Civil Engineers has risen from 38.2 in March 2003 to 41.6 in March 2007. The 61 and Over age range has increased from 6.3% to 11.8% (+5.5%), the 51 to 60 age range has decreased from 15.6% to 11.8% (-3.8%), and the 41 to 50 age range has increased from 18.8% to 29.4% (+10.6%). The 31 to 40 age range has increased 1.6% (increasing from 21.9% to 23.5%), and the 30 and under age range has decreased 14.0% (decreasing from 37.5% to 23.5%). Of all Civil Engineers, 41.2% are Baby Boomers and Generation X, followed by Veterans with 11.8%, and Generation Y with 5.9%.

- The average grade of USGS Civil Engineers has risen from 10.5 in March 2003 to 11.1 in March 2007. The GS 13-15 grade range has increased from 28.1% to 47.1% (19.0%), while the GS 11-12 grade range has decreased from 25.0% to 17.6% (-7.4%), and the GS 5-10 grade range has decreased from 46.9% to 35.3% (-11.6%).
- The majority of USGS Civil Engineers work under a Maxiflex work schedule (72.1%), with 27.0% listed as “Not Applicable”. Only 0.1% work under 4-10 Hour Days schedules, 0.4% on a 5-4/9 Workweek, and 0.1% on a 3-Day Workweek. Four employees (0.3%) work a First 40 work schedule.

Contract Specialists (DOI MCO)

- According to data in the Federal Payroll and Personnel System (FPPS) for March 2007, USGS Contract Specialists are on average 49.0 years old, and 9.1% are eligible to retire by the end of FY 2007 and 11.4% by the end of FY 2010. Contract Specialists have a net hire ratio of 1.14 for FY 2006 (8 hires to 7 separations) for all Contract Specialists, and a net hire ratio of 1.16 for FY 2006 (7 hires to 6 separations) for FTP Contract Specialists. Turnover rates for FY 2006 were 15.2% for all and 13.0% for FTP Contract Specialists.
- Historically, 33.3% of eligible Contract Specialists have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 14.3% in FY 2005 to a high of 42.9% in both FY 2004 and 2006.
- Based on historic LOE, 2.3% of USGS Contract Specialists are projected to retire by the end of FY 2007 and 4.5% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES All USGS 1102-Contract Specialist (Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	1	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
GS 11-12	22	4.5%	4.5%	4.5%	4.5%	4.5%	100.0%	0.0%
GS 13-15	21	0.0%	4.8%	4.8%	9.5%	14.3%	100.0%	0.0%
ALL GENERAL SCHEDULE	44	2.3%	4.5%	4.5%	6.8%	9.1%	100.0%	0.0%

- The average age of USGS Contract Specialists has risen from 48.4 in March 2003 to 49.0 in March 2007. The 61 and over age range has increased from 2.1% to 4.5% (+2.4%), the 51 to 60 age range has increased from 43.8% to 45.5% (+1.7%), and the 41 to 50 age range has decreased from 35.4% to 34.1% (-1.3%). The 31 to 40 age range has decreased 7.4% (decreasing from 18.8% to 11.4%), and the 30 and under age range has increased 4.5% (increasing from 0.0% to 4.5%). Of all Contract Specialists, 77.3% are Baby Boomers, followed by 15.9% Generation X, 4.5% Veterans, and 2.3% Generation Y.

- The average grade of USGS Contract Specialists has risen from 12.2 in March 2003 to 12.4 in March 2007. The GS 13-15 grade range has increased from 41.7% to 47.7% (+6.0%), while the GS 11-12 grade range has decreased from 52.1% to 50.0% (-2.1%), and the GS 5-10 grade range has decreased from 6.3% to 2.3% (-4.0%).
- The majority of USGS Contract Specialists work under a Maxiflex work schedule (88.6%), with 11.4% listed as “Not Applicable”.

Financial Specialists

- According to data in the FPPS for March 2007, USGS Financial Specialists are on average 43.6 years old, 9.4% are eligible to retire by the end of FY 2007, and 11.5% by the end of FY 2010. Financial Specialists had a net hire ratio of 1.14 for FY 2006 (8 hires to 7 separations) for all Financial Specialists, and a net hire ratio of 1.33 for FY 2006 (8 hires to 6 separations) for FTP Financial Specialists. Turnover rates for FY 2006 were 7.7% for all and 6.8% for FTP Financial Specialists.
- Historically, 42.9% of eligible Financial Specialists have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 25.0% in FY 2005 to a high of 75.0% in FY 2004.
- Based on historic LOE, 4.2% of USGS Financial Specialists are projected to retire by the end of FY 2007 and 6.3% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES All USGS 0501-Financial Administration & Program (Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	31	0.0%	0.0%	0.0%	3.2%	3.2%	100.0%	0.0%
GS 11-12	38	7.9%	10.5%	15.8%	15.8%	15.8%	100.0%	0.0%
GS 13-15	27	3.7%	7.4%	7.4%	11.1%	14.8%	100.0%	0.0%
ALL GENERAL SCHEDULE	96	4.2%	6.3%	8.3%	10.4%	11.5%	100.0%	0.0%

- The average age of USGS Financial Specialists has fallen from 44.3 in March 2003 to 43.6 in March 2007. The 61 and Over age range has increased from 0.0% to 1.0% (+1.0%), the 51 to 60 age range has decreased from 32.2% to 27.8% (-4.4%), and the 41 to 50 age range has decreased from 34.5% to 32% (-2.5). The 31 to 40 age range has increased 0.2% (increasing from 28.7% to 28.9%), and the 30 and under age range has increased 5.7% (increasing from 4.6% to 10.3%). Of all Financial Specialists, 90.7% are Baby Boomers, followed by 36.1% Generation X, 5.2% Generation Y, and 1.0% Veterans.

- The average grade of USGS Financial Specialists has fallen from 11.2 in March 2003 to 11.1 in March 2007. The GS 13-15 grade range has increased from 27.6% to 28.1% (+0.5%), while the GS 11-12 grade range has increased from 39.1% to 39.6% (+0.5%), and the GS 5-10 grade range has decreased from 33.3% to 32.3% (-1.0%).
- As of March 2007, 1 of 27 of USGS SES is a Financial Specialist.
- The majority of USGS Financial Specialists work under a Maxiflex work schedule (90.7%), with 8.2% listed as “Not Applicable”. One employee works a 5-4/9 Workweek.

Budget Analysts

- According to data in the FPPS for March 2007, USGS Budget Analysts are on average 49.0 years old, 18.1% are eligible to retire by the end of FY 2007, and 21.7% by the end of FY 2010. Budget Analysts had a net hire ratio of .83 for FY 2006 (5 hires to 6 separations) for all Budget Analysts, and a net hire ratio of .80 for FY 2006 (4 hires to 5 separations) for FTP Budget Analysts. Turnover rates for FY 2006 were 7.9% for all and 6.7% for FTP Budget Analysts.
- Historically, 15.2% of eligible Budget Analysts have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 6.7% in FY 2006 to a high of 33.3% in FY 2004.
- Based on historic LOE, 7.2% of USGS Budget Analysts are projected to retire by the end of FY 2007 and 13.3% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES								
All USGS 0560-Budget Analyst								
(Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	36	5.6%	5.6%	5.6%	13.9%	22.2%	100.0%	0.0%
GS 11-12	37	5.4%	16.2%	21.6%	21.6%	29.7%	100.0%	0.0%
GS 13-15	10	20.0%	30.0%	30.0%	40.0%	40.0%	100.0%	0.0%
ALL GENERAL SCHEDULE	83	7.2%	13.3%	15.7%	20.5%	27.7%	100.0%	0.0%

- The average age of USGS Budget Analysts has risen from 48.1 in March 2003 to 49.0 in March 2007. The 61 and over age range has increased from 3.3% to 8.4% (+5.1%), the 51 to 60 age range has increased from 38.3% to 38.6% (+0.3%), and the 41 to 50 age range has increased from 36.7% to 38.6% (+1.9%). The 31 to 40 age range has decreased 6.3% (decreasing from 18.3% to 12.0%), and the 30 and under age range has decreased 0.9% (decreasing from 3.3% to 2.4%). Of all Budget Analysts, 73.5% are Baby Boomers, followed by 16.9% Generation X, 8.4% Veterans, and 1.2% Generation Y.

- The average grade of USGS Budget Analysts has risen from 10.4 in March 2003 to 10.7 in March 2007. The GS 13-15 grade range has increased from 11.7% to 12.0% (+0.3%), while the GS 11-12 grade range has increased from 43.3% to 44.6% (+1.3%), and the GS 5-10 grade range has decreased from 45.0% to 43.4% (-1.6%).
- The majority of USGS Budget Analysts work under a Maxiflex work schedule (92.8%), with 3.6% listed as “Not Applicable”. Three employees work a 5-4/9 Workweek.

Human Resources Specialists (DOI MCO)

- According to data in the FPPS for March 2007, USGS HR Specialists are on average 46.9 years old, and 22.5% are eligible to retire by the end of FY 2007, and 28.2% by the end of FY 2010. HR Specialists have a net hire ratio of .25 for FY 2006 (2 hires to 8 separations) for all HR Specialists, and a net hire ratio of .13 for FY 2006 (1 hire to 8 separations) for FTP HR Specialists. Turnover rates for FY 2006 were 9.9% for all and 9.9% for FTP Human Resources Specialists.
- Historically, 17.5% of eligible HR Specialists have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 5.3% in FY 2004 to a high of 25.0% in FY 2006.
- Based on historic LOE, 12.7% of USGS HR Specialists are projected to retire by the end of FY 2007 and 16.9% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES All USGS 0201-Human Resources Specialist (Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	8	12.5%	12.5%	12.5%	12.5%	12.5%	100.0%	0.0%
GS 11-12	29	3.4%	3.4%	3.4%	20.7%	20.7%	100.0%	0.0%
GS 13-15	34	20.6%	29.4%	29.4%	35.3%	47.1%	100.0%	0.0%
ALL GENERAL SCHEDULE	71	12.7%	16.9%	16.9%	26.8%	32.4%	100.0%	0.0%

- The average age of USGS HR Specialists has fallen from 47.2 in March 2003 to 46.9 in March 2007. The 61 and over age range has increased from 2.3% to 4.2% (+1.9%), the 51 to 60 age range has decreased from 47.1% to 39.4% (-7.7%), and the 41 to 50 age range has increased from 24.1% to 28.2% (+4.1%). The 31 to 40 age range has increased 4.4% (increasing from 19.5% to 23.9%), and the 30 and under age range has decreased 2.7% (decreasing from 6.9% to 4.2%). Of all HR Specialists, 62.0% are Baby Boomers, followed by 31.0% Generation X, 4.2% Veterans, and 2.8% Generation Y.
- The average grade of USGS HR Specialists has fallen from 12.1 in March 2003 to 12.0 in March 2007. The GS 13-15 grade range has increased from 43.7% to 47.9%

(+4.2%), while the GS 11-12 grade range has decreased from 41.4% to 40.8% (-0.6%), and the GS 5-10 grade range has decreased from 14.9% to 11.3% (-3.6%).

- The majority of USGS HR Specialists work under a Maxiflex work schedule (90.1%), with 5.6% listed as “Not Applicable”. Only 4.2% work under 4-10 Hour Days schedules.

Information Technology (IT) Specialists (DOI MCO)

- According to data in the FPPS for March 2007, USGS Information Technology (IT) employees are on average 46.4 years old, and 12.3% are eligible to retire by the end of FY 2007 and 15.2% by the end of FY 2010. IT employees have a net hire ratio of .39 for FY 2006 (16 hires to 41 separations) for all IT employees, and a net hire ratio of .18 for FY 2006 (6 hires to 33 separations) for FTP IT employees. Turnover rates for FY 2006 were 7.6% for all and 6.6% for FTP IT Specialists.

- Historically, 24.7% of eligible IT employees have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 16.9% in FY 2005 to a high of 38.1% in FY 2004.

- Based on historic LOE, 6.2% of USGS IT employees are projected to retire by the end of FY 2007 and 8.1% by FY 2008.

RETIREMENT PROJECTION - PERCENTAGES								
All USGS 2210-Information Technology								
(Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS 5-10	67	1.5%	3.0%	7.5%	7.5%	9.0%	97.0%	3.0%
GS 11-12	300	5.0%	6.7%	8.7%	11.0%	14.3%	99.3%	0.7%
GS 13-15	153	10.5%	13.1%	16.3%	24.2%	31.4%	100.0%	0.0%
ALL GENERAL SCHEDULE	520	6.2%	8.1%	10.8%	14.4%	18.7%	99.2%	0.8%

- The average age of USGS IT employees has risen from 45.2 in March 2003 to 46.4 in March 2007. The 61 and over age range has increased from 3.6% to 4.2% (+0.6%), the 51 to 60 age range has increased from 27.7% to 34.0% (+6.3%), and the 41 to 50 age range has decreased from 39.4% to 34.2% (-5.2%). The 31 to 40 age range has increased 0.1% (increasing from 20.9% to 21.0%), and the 30 and under age range has decreased 1.9% (decreasing from 8.4% to 6.5%). Of all IT employees, 65.6% are Baby Boomers, followed by 29.0% Generation X, 4.0% Veterans, and 1.3% Generation Y.

- The average grade of USGS IT employees has risen from 11.5 in March 2003 to 11.7 in March 2007. The GS 13-15 grade range has increased from 25.6% to 29.4% (+3.8%), while the GS 11-12 grade range has decreased from 58.0% to 57.7% (-0.3%), and the GS 5-10 grade range has decreased from 16.5% to 12.9% (-3.6%).

- The majority of USGS IT employees work under a Maxiflex work schedule (80.8%), with 16.2% listed as “Not Applicable”. Only 0.4% work under 4-10 Hour Days schedules, and 2.5% on a 5-4/9 Workweek. One employee (0.1%) works a First 40 work schedule.

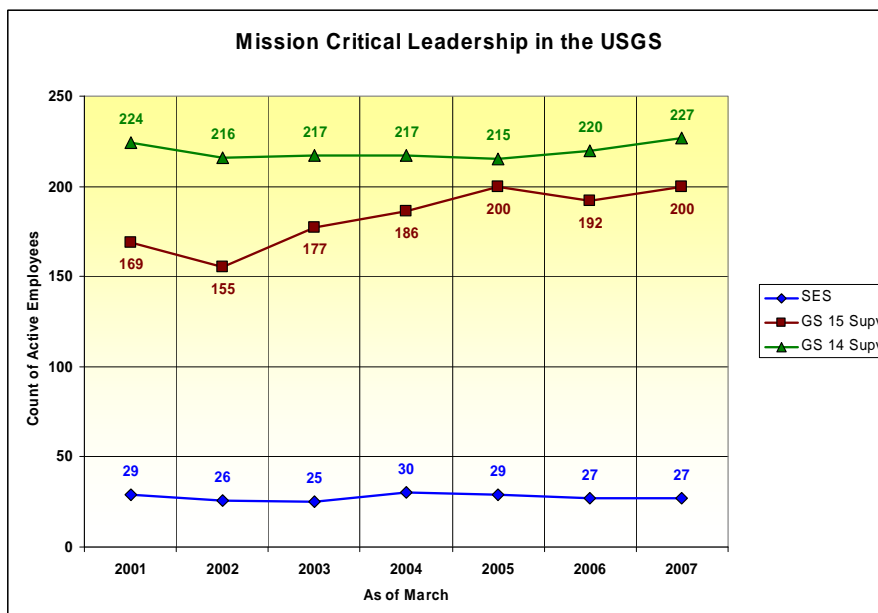
Leadership (DOI MCO)

DOI has defined Mission Critical Leadership positions as a position encumbered by an employee at the SES level, or General Schedule (GS or GM Pay Plans) positions at the 14 or 15 grade level designated as official supervisors.

**USGS Mission Critical Leadership Positions
by Pay Level**

Pay Level	Mar-01	Mar-02	Mar-03	Mar-04	Mar-05	Mar-06	Mar-07
Senior Executive Service (ES)	29	26	25	30	29	27	27
GS-15 Supervisors	169	155	177	186	200	192	200
GS-14 Supervisors	224	216	217	217	215	220	227
Total GS 14-15	393	371	394	403	415	412	427
Total GS 14-15 & SES Mission Critical Leadership	422	397	419	433	444	439	454

The number of GS-15 Supervisors has increased over time while the GS-14 Supervisor levels have stayed fairly constant. Some of the increase in the number of GS-15 level positions is due to the review and reclassification of science center manager positions that assumed higher level responsibility for managing programs within their geographic areas. The number of SES positions has fluctuated over the years from a high of 32 prior to 2000 to the current number of 27. The recent USGS realignment to an interdisciplinary structure will result in fewer SES positions in the Bureau.



Although not categorized by DOI as Mission Critical Leadership, SL and ST positions are vital to leading and managing the science mission of the USGS. SL and ST employee levels increased from March 2001 to March 2005 and then decreased slightly to March 2007, but with an overall 66.7% increase in SL and a 21.4% increase in ST from March 2001 to March 2007.

**All US Geological Survey General Schedule Employees
by Pay Level**

Pay Level	Mar-01	Mar-03	Mar-05	Mar-06	Mar-07
Executive (EX)	1	1	1	0	1
EH (Consultants)	3	3	3	2	3
Senior Executive Service (ES)	29	25	29	27	27
SL	6	8	12	11	10
ST	28	33	37	34	34

- According to data in the FPPS for March 2007, USGS Mission Critical Leaders are on average 52.9 years old. In terms of retirement eligibility, 24.2% of GS-14 Supervisors are eligible to retire in FY 2007 and 30.8% in 2008, 33.5% of GS-15 Supervisors are eligible to retire in FY 2007 and 39.5% in 2008, and 51.9% of SES are eligible to retire in FY 2007 and 51.9% in 2008. Mission Critical Leaders have a net hire ratio of .19 for FY 2006 (6 hires to 31 separations) for all Mission Critical Leaders, and a net hire ratio of .19 for FY 2006 (6 hires to 31 separations) for FTP Mission Critical Leaders. The low net hire ratio is due to the fact that many of the leadership positions are filled through internal procedures such as merit promotion or reassignment versus new hires to the bureau. Turnover rates for FY 2006 were 6.9% for all and 6.9% for FTP Mission Critical Leaders.
- Historically, 17.3% of eligible Mission Critical Leaders have retired (average rate for FY 2004 – 2006), although the rate has fluctuated from a low of 16.3% in FY 2006 to a high of 19.0% in FY 2005.
- Based on historic LOE, 14.8% of USGS SES are projected to retire by the end of FY 2007 and 18.5% by FY 2008. For GS-15 Supervisors, 8.0% are projected to retire in FY 2007 and 14.5% in 2008. For GS-14 Supervisors, 7.0% are projected to retire in FY 2007 and 11.5% in FY 2008.

RETIREMENT PROJECTION - PERCENTAGES All USGS Mission Critical Leadership (Based on Avg. USGS' Occupational Category LOEs)								
Pay Levels - Grade Distribution	Total Count Active Employees March 31, 2007	FY07	FY08	FY09	FY10	FY11	FY12 & After	Not Eligible
GS-14 Supervisor	227	7.0%	11.5%	14.5%	20.7%	26.9%	100.0%	0.0%
GS-15 Supervisor	200	8.0%	14.5%	20.5%	27.5%	32.0%	100.0%	0.0%
SES	27	14.8%	18.5%	22.2%	33.3%	51.9%	100.0%	0.0%

- The average age of USGS Mission Critical Leaders has risen from 52.0 in March 2003 to 52.9 in March 2007. The 61 and over age range has increased from 7.4% to 8.6% (+1.2%), the 51 to 60 age range has increased from 54.2% to 59.9% (+5.7%), and the 41 to 50 age range has decreased from 34.1% to 27.8% (-6.3%). The 31 to 40 age range has decreased 0.6% (decreasing from 4.3% to 3.7%). Of all Mission Critical Leaders, 87.0% are Baby Boomers, followed by 8.1% Veterans, and 4.8% Generation X.
- The majority of USGS Mission Critical Leaders work under a Maxiflex work schedule (77.5%), with 20.1% listed as “Not Applicable”. Only 1.5% work under 4-10 Hour Days, and 0.8% on a 5-4/9 Workweek. Two employees (0.1%) work a First 40 work schedule.

BUREAU CHALLENGES

USGS Science in the Decade 2007-2017

Workforce planning must be predicated on the mission goals and programmatic needs of an organization. The USGS recently developed a long-term Science Strategy that provides a vision for how USGS science can make substantial contributions to the well-being of the Nation. This strategy is intended to inform long-term approaches to USGS program planning, technology investment, partnership development, and workforce and human capital strategies. The report examined the USGS science goals and priorities and identified six major science directions, which are described below.

Understanding Ecosystems and Predicting Ecosystem Change

Large-scale, rapid change is now taking place in natural systems. Growing human population and significant alterations to landscapes, oceans, and the atmosphere have caused widespread changes in the global distribution and abundance of organisms. Changes in biodiversity alter ecosystem processes, productivity, and structure and may reduce the resilience of ecosystems to future environmental change. Permafrost melting, landscape fragmentation, forest clearing, river regulation, and coral reef bleaching are causing self-maintaining systems that evolved over millennia to become less resilient. People value these ecosystems in their own right, and as they decline or even collapse, the environmental foundations upon which human society has been built may begin to erode.

A better understanding of ecosystem condition, change, and causes of change is needed, but the United States currently lacks the scientific indicators of ecosystem condition. In addition, comprehensive maps of ecosystems distribution, an ecosystem monitoring program and a network of intensive research sites are needed to help land and resource managers make the sound, informed decisions that are vital to our ecosystems sustainability. If these challenges are not addressed, changes in ecosystem condition, whether for better or worse, will likely not be recognized, diagnosed, or understood at a national scale. These deficiencies hamper the Nation's ability to understand, forecast, and mitigate ecosystem change, assess ecosystem vulnerability to human activities, and avoid damage to regional and global ecosystems. In response to this need, the USGS will: research into how ecosystems work, and how and why they change; establish a nationwide monitoring program to understand the current ecosystem status and track trends through use of objective, scientifically based indicators; map the Nation's ecosystems; develop techniques for managers to use in managing, protecting, restoring, and evaluating ecosystems and the services they provide; and assess tools that will enable the Nation to incorporate understanding of ecosystem properties and processes into decisions that affect the health and welfare of human societies and the environment.

The Role of the Environment and Wildlife in Human Health

There is mounting evidence that environmental factors contribute substantially to many diseases of major public health significance throughout the world. The National Institute of Environmental Health Sciences (NIEHS) attributes an estimated 24 percent of the global disease burden and 23 percent of all human deaths to environmental factors (National Institute of Environmental Health, 2006). Dealing with emerging and resurging diseases such as avian influenza and West Nile virus, as well as other environmental contaminants like mercury in fish, arsenic in water, and naturally present asbestos, requires the ability to anticipate potential environmental ecosystem health threats, recognize pathogens or contaminants when they first appear, and respond quickly and appropriately.

As the only integrated natural resource research Bureau in the Federal Government, USGS is uniquely qualified to provide the information needed to link environmental and human health issues. The USGS will provide the scientific and monitoring information essential for helping the Nation to identify existing, emerging, and resurging environmental and ecosystem health threats. This will be achieved by integrating existing USGS human-health data, by establishing an interactive information system for environmental disease pathways, thus clarifying potential environmental disease pathways, by forming or strengthening teams to respond rapidly to human health threats, and by enhancing collaborative research with allied public health organizations.

Water Census of the United States

A fresh and dependable supply of water is critical to sustaining life. “The strategic challenge for the future is to ensure adequate quantity and quality of water to meet human and ecological needs in the face of growing competition among domestic, industrial-commercial, agricultural, and environmental uses” (National Research Council, 2004). Many States expect future water shortages and are concerned about how the Federal Government could help them meet that challenge. Also, changing climate patterns will affect freshwater availability at the local and regional levels. Water is a key ingredient for healthy communities, economies, and natural environments of the United States. Yet, no comprehensive census of water information, summarizing the entire scope of freshwater quantity and quality needed for human and environmental needs, currently (2007) exist for America or is planned for the future.

As the primary Federal agency responsible for scientific evaluation of the natural resources of the United States, including its water and biological resources, the USGS will develop a Water Census of the United States to inform the public and decision makers about:

1. The status of its freshwater resources and how they are changing;
2. A more precise determination of water use for meeting future human, environmental, and wildlife needs;
3. How freshwater availability is related to natural storage and movement of water as well as engineered systems, water use, and related transfer;

4. How to identify water sources, not commonly thought to be a resource, that might provide freshwater for human and environmental needs; and
5. Forecasts of likely outcomes of water availability, water quality, and aquatic ecosystem health due to changes in land use and land cover, natural and engineered infrastructure, water use, and climate.

Energy and Minerals

The Nation faces increasing demand for energy and mineral resources, a growing dependence on resources imported from other countries, increasing pressure to consider alternative sources, and a need to minimize environmental effects associated with resource development and use. We need to better understand the domestic and global distribution, genesis, use of and consequences of using these resources to address national security issues, manage the Nation's domestic supplies, predict future needs, anticipate as well as guide changing patterns in use, facilitate creation of new industries and secure access to appropriate supplies.

It is inevitable that the United States will move in a direction that diversifies its energy sources to reduce its dependence on imports from specific countries and address issues of greenhouse gas emissions. It is equally inevitable that the United States will be involved in building new technologies based on new mineral and living resource components. As these energy, mineral, and living resource requirements evolve, understanding not only the geological consequences of these changes, but also the biological, hydrological, and landscape consequences will poise the USGS to contribute to informed dialog when policy, management and stewardship issues arise about extraction, use, regulation, and waste management. The USGS anticipates four strategic areas of focus for the future:

1. **Natural resources security.** The USGS needs to continue to expand its research and assessment portfolio to include a comprehensive suite of energy sources including hydrocarbon-based sources and nonhydrocarbon-based sources.
2. **Environmental Health.** Energy and mineral resources need to be understood in broader context of the comprehensive life-cycle of the energy or mineral commodity. Assessments need to address the occurrence, formation processes, and extraction methods, as well as how the waste products of energy and mineral resources influence landscape, water, climate, ecosystems and human health.
3. **Economic Vitality.** The USGS can contribute to the American Competitiveness Initiative by identifying, studying, and understanding potential new energy and mineral commodities. This research can provide opportunities for USGS to partner with other agencies or industry in the use of this knowledge to facilitate development of new industries and guide government decisions about the government role in promoting new industries.
4. **Management of DOI, Federal, and Other Lands.** Future decisions about the use of energy and mineral resources on Federal lands will need to accommodate ecosystem-based management practices. U.S. Federal onshore lands, many of which are managed within DOI, will need to accommodate ecosystem-based

management practices as they face competing demands for recreation, transport, leasing, conservation, and economic growth. USGS monitoring, assessment, and research must be relevant to managers who require decisions informed by science.

A National Hazards, Risk, and Resilience Assessment Program

The Nation faces increasing losses from natural hazards, threatening safety, security, economic well-being, and natural resources. Governments at all levels are faced with difficult decisions, balancing growth and development while ensuring the safety of their communities. A core element of the USGS mission is to provide scientific information in order to minimize loss of life and damage to property from natural disasters. The USGS monitors, integrates, analyzes, and delivers a broad spectrum of natural-science information that enables community leaders to make key decisions on the allocation of resources. These capabilities include assessments of solid earth, hydrological, and biological hazards affecting both ecosystems and the built environment. The USGS leads the Nation in effectively harnessing advances in Geospatial Information Systems, Internet and information technologies to develop objective decision-support tools. However, to manage and reduce risk from natural hazards, the USGS must augment its strengths with partnerships that reduce societal vulnerability, increase community resilience, and engage and inform decision makers at all levels. There are five areas where the USGS must focus its hazards efforts:

1. Robust Monitoring Infrastructure. The main USGS investments needed here include:
 - a. Full deployment of the Advanced National Seismic System to improve seismic monitoring.
 - b. Development and deployment of the National Volcano Early Warning System.
 - c. Deployment of a stable, core network of USGS-supported streamgages through the National Streamflow Information Program.
 - d. Expansion of the Marsh Surface Elevation Table Network to evaluate the effects of sea-level rise and hurricanes on coastal wetlands.
 - e. Access to advanced technology, such as Light Detection and Ranging to assess and monitor hazards-related landscape changes, particularly coastal change.
2. Technology for Network Communications. In the next decade, the USGS should take advantage of new and emerging technologies for network communications and rapid and useful communications of hazards information.
3. Characterizing and Assessing Hazards. Assessing where hazards are likely to occur and how large they are likely to be is essential for making decisions about where to live and build infrastructure. Future USGS programs will focus on the development of the necessary methodologies and procedures to substantially expand urban hazard mapping throughout the Nation.
4. Forecasts Based on Understanding Physical Processes. Accurate forecasts and predictions depend on a thorough understanding of the physical processes controlling a hazard's occurrence, distribution, timing, and severity, as well as the

effects of hazards on the landscape, the built environment, and human health. Future USGS research must be expanded to reduce uncertainties and improve understanding of these processes.

5. Partnerships. In the future, the USGS will be working with partners in universities and other governmental agencies to monitor the changing vulnerability of our cities and ecosystems due to socioeconomic trends, land-use changes, ecosystem loss, and climate change.

Climate Variability and Change

Climate influences every aspect of life on earth, affecting human health and well being, water and energy resources, agriculture, forests, natural landscapes, air quality, and sea levels. Objective and interdisciplinary science is needed to understand more clearly the complexity of global climate issues. To address these issues, the USGS will apply its strengths in monitoring, research, integration, modeling and analysis to help the Nation understand and prepare for climate change and its effects. Three strategic areas of monitoring, research and assessment will form the foundation of the USGS climate change strategy:

1. Monitoring. The USGS will develop new biological assessment techniques to be applied to species, populations, and physical variables within and between ecosystems with climate change as the major variable in common. USGS will also continue to gather and analyze information about land-cover and land-use change, water, earth surface processes, species, and ecosystem function and integrate these into a National Climate Change Response research program.
2. Research. The USGS will conduct research to advance the knowledge of processes that are crucial to predicting the future evolution of global climate and to understand the land, water environment, and societal consequences of changing climate.
3. Assessment. The USGS will develop forecasting tools to test management options for, and potential effects on, land, water, biological and ecosystem resources.

Additional Challenges and Opportunities

Other programmatic challenges and opportunities that need to be addressed in the near future are:

The Future of Land Imaging

For more than 3 decades, Landsat satellite data have been used to evaluate the dynamic changes of the Earth's land surface caused by both natural processes and human practices. Applications range from disaster monitoring after Hurricane Katrina and the Indonesian tsunami to global crop-condition analysis. Landsat data are vital for evaluating seasonal surface- and ground-water use, planning water budgets, managing

irrigation practices, administering water rights, studying effects related to converting agricultural lands to urban use, and much more.

Landsats 5 and 7 have both exceeded lifecycle projections and both will eventually run out of fuel. The remote-sensing community has been working on a satellite and sensor successor to fill the near-term need for Landsat data. Called the Landsat Data Continuity Mission (LDCM), or Landsat 8, the new satellite is currently planned for launch in 2011. To address the longer-term need for land imaging data, in 2007 the United States announced the formation of the U.S. National Land Imaging Program (NLIP) to consolidate and renew the responsibilities of the U.S. Government to ensure that civil land imagery is made available to the United States on a continuous and uninterrupted basis. This new national program will: enable the use of civil-operational land imaging by all levels of Government and by profit and non-profit institutions in the U.S. and abroad; ensure that States, localities, tribes and other public institutions can apply land imagery data and information to meet their needs; implement a program of acquisition of U.S. civil-operational land imaging satellites required to meet the needs of the Nation; and, acquire data from U.S. commercial and foreign government and commercial sources to augment U.S.-owned data when needed.

One of the challenges with satellite data is to make these large data sets more easily accessible to the user community. The USGS is addressing this challenge through implementation of an LDCM pilot for data distribution where selected Landsat 7 image data of the U.S. are available through the Web (<http://glovis.usgs.gov> or <http://earthexplorer.usgs.gov>). This pilot will evolve with the LDCM project and will lay the groundwork for future USGS satellite data distribution.

Challenge of Data Integration and Evolving Technology

The use of and competition for natural resources on a global scale and natural threats to those resources have the potential to impact the Nation's ability to sustain its economy, national security, quality of life, and natural environment. They also pose natural-science challenges. Development and application of state-of-the-art technologies as well as expansion of information technology to allow for seamless data and information sharing is critical to the success of science to make informed decisions in the future. To ensure that resource managers and policymakers have the information they need to support decisions affecting ecosystems, data and information must be readily shared among scientists and collaborators and with partners and customers in forms suited to their needs, interests, and responsibilities. The USGS will use its information resources to create a more integrated and accessible environment for its vast resources of past and future data. It will invest in cyber-infrastructure, nurture and cultivate programs in natural-science informatics, and participate in efforts to build a global integrated science and computing platform. The USGS will also foster a culture and resource base that encourages innovation, thereby advancing scientific discovery through the development and application of state-of-the-art technologies.

Grand Challenges in Environmental Science and the National Ecological Observation Network

Grand Challenges in Environmental Science, NRC 2001, as identified by the National Academy of Sciences, includes understanding biodiversity, biogeochemical cycles, climate change, hydroecology, infectious disease, invasive species, and land use. The USGS is collaborating with the National Science Foundation (NSF) in establishing the National Ecological Observation Network (NEON) to observe the state of the Nation's ecosystems. NEON is a continental-scale research platform for discovering and understanding the effects of climate change, land-use change, and invasive species on ecology. The USGS is also working with NEON management to identify their remote-sensing and land-cover data needs.

WORKFORCE NEEDS AND SOLUTIONS

Two of the DOI MCOs are Hydrology and Geology. The USGS employs the majority of individuals within these occupations and, as a result, is responsible for leading the workforce analysis for these occupations in relation to the identification of needed competencies and skill sets. Over the last several years the USGS has developed a comprehensive set of technical competencies and skill sets for all its primary scientific occupations including Geology and Hydrology. The technical competency and skill sets cover the diverse and broad range of work performed by individuals encumbering these positions such as paleomagnetism, petrology, stratigraphy, sediment transport, geochemical modeling, and genetic analysis. The Bureau has administered skills surveys and utilized the results to develop training, analyze workforce utilization and conduct targeted recruitment.

Mission Critical Competency Requirements – Collaboration, Partnering and Decision Science

In addition to the above, the Bureau is in the process of implementing an organizational and program shift from a traditional single science discipline focus to an interdisciplinary approach in order to bring the strength of all of our science to bear on pressing issues of the 21st century. The management structure and workforce shift impacts the way our scientists work and as a result has placed a greater emphasis on collaboration, partnering and decision science competencies. To respond to this need the USGS has embarked on an effort to assess the competency and skill levels of not only our hydrologists and geologists but of all the professional staff requiring these competency and skill sets and to develop and implement strategies to address the gap.

The competency and skill level required at the entry level include the ability to participate and contribute to collaborative work, understand, maintain and influence work relationships and value professional organizations and networks. At the journeyman level the scientist should possess the ability to facilitate a collaborative culture, create and communicate strategic opportunities to collaborate towards achievement of common goals and the ability to manage and monitor collaborative relationships and partnerships. At the highest level, the scientist should possess the ability to create a vision of administrative capacity with partners to address problems effectively, to strategically plan and implement partnering and collaborative relationships and the ability to generate commitment. At the senior science and management levels, advanced collaboration, partnership and structured decision making skills and competencies are critical to the success of the Bureau programs.

Most recently the USGS Office of Human Capital lead the design and presentation of a USGS Partnering and Collaboration Workshop where more than 100 scientists and managers discussed effective collaboration practices and techniques. USGS partnering experiences highlight the breadth and depth of collaboration within USGS science programs and the need to engage in effective collaborative planning. The workshop highlighted the progress we have made in increasing the use and value of our science

through partnerships and collaborative efforts. Greater knowledge of the tools available to broaden and strengthen the use of partnering and collaboration will be valuable as we implement our Science Strategy.

The USGS is in the process of developing a number of strategies to enhance the competency and skill level that will build on the initial efforts to include the following:

- Establish SWAT Teams using trained individuals for early assessment of the potential need for a mentor or resource when a coalition is formed and new integrated science project is funded through the regions.
- Launch an education campaign designed to familiarize employees with the concept of structured decision making. Create and post an introductory training video and send out an all-employee memorandum announcing its availability.
- Train at least three new people in each region in decision science techniques in FY 08 and deploy them into the new interdisciplinary projects starts funded from the region this year.
- Write and issue a decision science implementation guide. Include examples from a broad range of settings that will resonate with USGS staff.
- Sponsor another workshop targeted at engaging land managers and all USGS scientists.
- Create a decision science wiki to provide a discussion forum and resource distribution point for an informal community.

Scientific and Technical Competency Requirements

The workforce needs described below reflect the scientific and technical skill and competency requirements for the USGS and plans and solutions to meet the workforce and skill needs.

Biological Sciences

Workforce needs: Fundamental to the USGS mission is the goal of ensuring the continued availability of long-term environmental and natural resource information, by conducting systematic analysis and investigations to provide a scientific basis for natural resource problem solving and decision making. The USGS serves this function through the activities of eight programs:

- Wildlife: Terrestrial and Endangered Resources,
- Fisheries: Aquatic and Endangered Resources,
- Invasive Species,
- Status and Trends of Biological Resources,
- Contaminant Biology,
- Terrestrial, Freshwater and Marine Ecosystems,
- Biological Informatics, and
- Cooperative Research Units.

The core mission of these programs is to produce and make available to DOI natural resource managers and decision makers scientific information to support science-based conservation and restoration, management, and regulatory actions to sustain biological communities.

Plans to address workforce needs: Short-term, rapid response technical assistance is needed to provide timely results to answer science needs in emergency or acute situations. Technical assistance activities may develop into long-term research if scientific uncertainty prohibits immediate action by natural resource managers or decision makers. Short-term targeted research complements long-term monitoring, research, and modeling activities that increase our understanding of complex systems. Research activities are conducted through seventeen biological Science Centers, their laboratories, field stations, and cooperating academic institutions. Research often involves fieldwork that requires sophisticated technologies and other methodologies. In addition to traditional biologist and ecologist positions, molecular biologists, information technology specialists, and systems ecologists will be needed. Needed skills will be acquired through a combination of direct hires and contract staff. New staff will be sought through professional recruiting, recruitment through professional societies, and recruitment through internet resources. Internships and university recruitment will be used to acquire new graduates in advanced degree areas.

Land Remote Sensing/National Land Imaging

Workforce Needs: To accomplish the goals outlined in the “Plan for a U.S. National Land Imaging Program” (NLIP), additional staff will be essential to perform the definition, planning, business assessment, and interagency and international policy and technical coordination needed for future civil-operational land imaging. Highly skilled staff, such as aerospace engineers, remote sensing specialists, systems engineers, business analysts, policy specialists, and applications scientists will be required to implement this national land imaging program.

Plans to Address Workforce Needs: The USGS will continue to work with DOI to analyze and define the number and types of staff needed to direct the NLIP. Under its current proposal, a number of FTE will be added in FY 09 and beyond in the areas outlined above. Needed skills will be acquired through a combination of direct hires and contract staff. New staff will be sought through professional recruiting, recruitment through professional societies, and recruitment through internet resources. Internships and university recruitment will be used to acquire new graduates in advanced degree areas. Mendenhall and National Research Council (NRC) post-doctoral candidates in the natural sciences will also be sought. Training opportunities will allow existing USGS staff to augment existing skills with new business and technical skills. NLIP will continue to acquire support from NASA in a number of skill domains, including satellite acquisition management, satellite systems and subsystems engineering, and many technical engineering specializations such as thermal, mechanical, and structural engineering.

Geographic Analysis and Monitoring

Workforce Needs: The USGS geographic science program will focus on giving planners, decision makers and the public the data and tools necessary to improve land use decision making. These tools will help promote a productive and sustainable environment, sustain environmental quality, and increase public safety. USGS will become a global leader in the sciences of land observations and monitoring via remote sensing; land-surface change and trends; impacts on and consequences to environmental and social processes and systems; integrated vulnerability and risk assessments that incorporate the natural, social, and economic sciences; and scenario-based, alternative futures models and tools that help to reduce environmental and hazard risks. To achieve this, Geography must augment its capabilities in a few key areas including statistics, habitat modeling, water quality modeling, and landscape ecology.

Plans to Address Workforce Needs: USGS will acquire these skills by: recruiting scientists throughout USGS to augment modeling capabilities, collaborating with scientists from other agencies and institutions; increasing training opportunities (internal training, graduate school programs) in modeling and statistics to enhance geographic capabilities; increasing the number of post doctoral scientists (e.g. Mendenhall and NRC); and where possible, hiring RGE scientists with backgrounds in remote sensing, landscape modeling, and statistics.

Hydrologic Science

Workforce Needs: The USGS water programs conduct hydrologic monitoring, investigations, and research in support of the mission of the USGS. At present, water programs are conducted in a multidisciplinary fashion—within the USGS, with State and local agencies, with universities, and with private industry—to address the complex earth science issues facing the Nation in which water is a factor. The technical offices within the USGS that support the water programs are the Office of Surface Water, Office of Ground Water, Office of Water Quality, and Office of Water Information. Hydrologic science includes many scientific and engineering specialties, including but not limited to hydrology, hydraulics, biology, ecology, chemistry, geography, geology, physics, soil science, statistics, numerical analysis, and computer science. The USGS investigates the occurrence, quantity, quality, distribution, uses, and movement of surface and ground water. These investigations allow the USGS to develop and disseminate scientific knowledge and understanding of the Nation's water resources. Activities include data collection, resource assessment, research, and coordination among numerous other entities involved in water-resources research, data acquisition, or data transfer. These activities are carried out by scientists and hydrologic technicians in Water Science Centers, Water's National Research Program, and Water's technical offices through specific Federal programs, sometimes in cooperation with State and local governments or other Federal agencies.

USGS science priorities continually evolve to meet the needs of the Nation. Responding to changing science priorities requires changes in workforce capabilities, adding expertise and skills to move in new science directions. Several guidance documents are used to delineate the changing science and technology directions for water programs during the next 5 years—the USGS (2007) strategic plan, the National Science and Technology Council (2007) strategy for science and technology to support water availability and quality, the Office of Science and Technology Policy / Office of Management and Budget’s Memorandum for the Heads of Executive Departments and Agencies regarding annual Administrative R&D Budget Priorities. Other evaluations critical to workforce planning include recent external reviews (such as the National Academy of Sciences’ “River Science at the U.S. Geological Survey”, “Assessing the National Streamflow Information Program”, “Estimating Water Use in the United States”, and “Opportunities to Improve the U.S. Geological Survey National Water Quality Assessment Program” as well as the National Hydrologic Warning Council’s “Benefits of USGS Streamgaging Program”). The plan will also be informed by the Office of Science and Technology Policy’s SWAQ strategic plan, “A Strategy for Federal Science and Technology to Support Water Availability and Quality in the United States”, a variety of findings of the FACA, Advisory Committee on Water Information, and internal reviews. Future scientific developments and reports (such as the National Research Council’s report on USGS Water Science, which is expected to be completed at the end of calendar year 2008) will influence updates to workforce plans.

The USGS water program focuses on staffing Water Science Centers and the technical offices to support these national strategic directions for science and technology, especially the 6 multidisciplinary challenge areas of the USGS science strategy: 1) understanding ecosystems and predicting ecosystem change; 2) climate variability and change; 3) energy and minerals for the Nation’s future; 4) national hazards, risk, and resilience assessment; 5) the role of environment and wildlife in human health; 6) a water census of the United States. In addition, the Headquarters water program’s workforce is aging and will need to replace those who retire with scientists with expertise in many scientific and engineering specialties, including but not limited to hydrology, hydraulics, biology, ecology, chemistry, geography, geology, physics, soil science, statistics, numerical analysis, and computer science. An ability to work on multidisciplinary projects will be essential. Of particular importance will be areas of specialty in, but not limited to, basic hydrology, hydraulics, hydrodynamics, hydrogeology, geophysics, aquatic chemistry, geochemistry, biogeochemistry, ecology, statistics, and computer science.

Plans to Address Workforce Needs: The USGS currently enjoys a strong reputation in the field of hydrology and has traditionally been successful in attracting and retaining the Nation’s brightest, most capable hydrologists and hydrologic technicians. New staff will be sought through professional recruiting, recruitment through professional societies, and recruitment through internet resources. (The Bureau recently modified its vacancy announcement strategy and appearance as a result of a Career Pattern analysis of the hydrology occupation.) In addition, internships and university recruitment will be used to acquire new graduates in advanced degree areas. For

temporary needs the Bureau obtains help internally from our broad base of hydrologists in the science centers through temporary reassignment.

Geologic Science

Workforce Needs: The USGS geologic science mission is to provide the nation with accurate and timely information and research on geologic hazards, resources, and geologic processes. Utilizing Federal, contract, emeritus and volunteer scientists and support staff, the organization provides long-term monitoring, research and assessments to understand basic geologic processes and human interaction with the natural environment. A workforce plan was recently completed that addresses the seven geologic science themes:

- Geologic hazard assessments for mitigation planning.
- Short-term prediction of geologic disasters.
- Understanding of the Nation's energy and mineral resources in a global geologic, economic and environmental context.
- Anticipate the environmental impacts of climate variability.
- Establish the geologic framework for ecosystem structure and function.
- Interpret links between human health and geologic processes.
- Determine the geologic controls on ground water resources and hazardous waste isolation.

A broad range of scientific skills is required to develop, plan, and conduct research necessary to analyze and interpret results for site specific investigations. Results are synthesized and tailored to the stakeholder's needs. These skill areas include expertise in specialized areas such as geologic mapping, seismology, paleoseismology, geophysics, seismotectonics, technophysics, computer modeling, remote sensing, telemetry, debris-flow modeling, paleontology, climatology, geochronology, Quaternary paleoecology, seafloor mapping, sediment dynamics, gamma-ray geophysics, economic geology, spatial analysis, fluid flow modeling, geomicrobiology, seismic geophysics, and planetary science.

Plans to Address Workforce Needs: Three principle forces drove the creation of the workforce plan: 1) changing program science priorities, 2) projected level funding for the next several years, and 3) an increasingly retirement-eligible government workforce. The USGS is analyzing a variety of solutions to carry out the workforce strategy such as the following.

- The USGS will prioritize new hires to maintain high priority science activities and to pursue new science directions. Succession planning will be essential for some skill sets in which the current staff is small and the pool of individuals outside the USGS is also small. In addition, to ensure mission goals are met, the USGS will strive to maintain a core of permanent staff with fundamental and critical scientific, technical and administrative expertise.
- The USGS will balance the proportion of permanent staff to non-permanent staff and contracts. The use of term and temporary employees will be utilized ensuring the

Federal employees fill principal-investigator positions. Technical staff may in many instances be filled by relying on the use of contractors.

- The USGS will provide training opportunities for existing staff to develop new skills, knowledge and expertise.
- The USGS will continue the active use of the student employment, post-doctoral opportunities, and Scientist Emeritus programs.
- The USGS will collaborate and partner with other Interior Bureaus and Federal agencies, State and local governments and academia.

Data Integration

Workforce Needs: The 2007 USGS Science Strategy calls for the development of a fully integrated science data and information environment that can be accessed and used by USGS scientists and our collaborators and customers to address complex natural science issues. In order to design, develop, and sustain this type of data environment across the Bureau, the USGS will need individuals with advanced skills in data modeling, data architecture, data interoperability, data standards, and related computer/information science and information technology fields.

Plans to Address Workforce Needs: The Bureau has developed a high level strategy which outlines key objectives for the achievement of a USGS-wide integrated data environment. This will be used to help develop a more in depth workforce plan for data integration, in order to assess current skills, define the prospective future state, and identify the most critical skill gaps. In FY 2008, the USGS will establish a pilot effort in data modeling for global change science. This pilot effort will be used to further elucidate the workforce needs in this area.

Information Technology

Workforce Needs: In FY 2007, the USGS is completing a Business Strategy Review of IT functions throughout the Bureau. Preliminary results from this review indicate workforce needs in key areas that are needed to support USGS and DOI strategic priorities and goals. These include developing the IT workforce needed to build and maintain the fully integrated data environment envisioned in the 10-year USGS Science Strategy and the need to address skill gaps in critical areas identified in the 2006 DOI IT skills assessment. High priority areas to address include the issue of a generally aging IT workforce, and skill gaps in IT security, certification and accreditation, and IT project management.

Plans to Address Workforce Needs: The USGS will use the results of the Business Strategy Review to develop a more in depth workforce plan for IT. The USGS is also participating on the DOI IT Workforce Planning Committee and workforce planning focus groups in development and implementation of the DOI IT Workforce Improvement Plan.

Enterprise Science Publishing

Workforce Needs: In 2005, the Bureau began to transition to an enterprise-wide science publishing function. By incorporating consistent business practices, implementing advanced technical solutions, consolidating service center locations, and providing for flexibility in workforce and production capabilities, the Enterprise Publishing Network will provide timely and cost-effective service to USGS scientists and to the public. Workforce needs center on right-sizing the enterprise publishing organization and providing the necessary publishing-related skill sets (e.g., in technical editing) to support the publishing requirements of the Bureau, now and into the future.

Plans to Address Workforce Needs: An initial staffing plan for the Publishing Network was developed in FY 2006. VSIP/VERA authority was used in FY 2006 to begin to adjust workforce composition to meet current and future requirements. During FY 2006, the Enterprise Publishing Network began operations. Further experience gained during FY 2007 will be used to refine a long-term workforce plan and to guide additional steps necessary (including VSIP/VERA) to right-size the organization and achieve the necessary skill mix to support the Bureau's science publishing needs.

National Geospatial Technical Operations

Workforce Needs: The USGS is realigning its national-level geospatial data and technology operations to improve efficiencies and to modernize and streamline technical operations in support of the development of *The National Map* and the National Spatial Data Infrastructure.

Plans to Address Workforce Needs: In 2006-2007, the USGS closed two mapping centers and consolidated operations in two remaining centers into the National Geospatial Technical Operations Center (NGTOC). In addition, VSIP/VERA authority was used to begin to realign and right-size the workforce to meet current and future requirements. The A-76 competitive sourcing study that was initiated in FY 2006 to study the functions of the NGTOC was cancelled in June 2007. To expedite the process of transforming its geospatial technical operations in a timely manner, the USGS will use an alternative strategy to the A-76 process to achieve efficiencies and modernization of the NGTOC.

Acquisitions and Grants

Workforce Needs: All DOI Bureaus were required to establish a system to accomplish all acquisition transactions electronically by Fiscal Year (FY) 2007, requiring deployment of the Interior Department Electronic Acquisition System (IDEAS) at all acquisition sites. In addition, a new contracting certification mandate from the Office of Federal Procurement Policy established significantly increased education and training requirements be met for all individuals retaining acquisition authority, phasing in from October 2006 through December 2008. Given the combined requirement for IDEAS deployment and contracting certification, reducing the size of the overall acquisition infrastructure was considered the most effective way to implement the new

requirements at the least total cost. In addition, implementation of an entirely electronic acquisition process reduces the need for data calls to the field and dramatically enhances our ability to effectively manage our internal control procedures. In less than two years, USGS will begin migrating to the Financial Business Management System (FBMS). The transition we have already undergone in acquisition to consolidate and convert to electronic processes will serve us well in the daunting task FBMS implementation will present.

As with many other Federal agencies, the USGS is implementing the Office of Federal Procurement Policy (OFPP) requirements for training and certification for Contracting Officers. The required training and certifications has increased training expenses associated with maintaining warrant authorities. In addition to these enhanced education and training requirements, DOI required each Bureaus to accomplish all acquisition transactions electronically by Fiscal Year (FY) 2007, requiring deployment of the Interior Department Electronic Acquisition System (IDEAS) at all acquisition sites. Consequently, the result of these two initiatives has started a trend of acquisition workload shifting to the regional and headquarters acquisition offices where the contracting workforce is centralized. USGS has not experienced difficulty retaining qualified contract specialists however some offices have experienced difficulty recruiting qualified individuals who meet the new OFPP standards.

Plans to Address Workforce Needs: The USGS is continuing to assess the impact of increased certification and education requirements and the financial impacts. A variety of recruitment efforts to locate qualified individuals will be pursued. Entry level opportunities will be filled through student employment programs and or recent college graduates with offices that have the ability to recruit and train. Journeyman level recruitments will be filled through the typical vacancy announcement process.

WORKFORCE TRENDS

As part of the workforce analysis, Bureaus were asked to perform a general analysis of the demographic and environmental impacts on the workforce to include changing labor market availability, demographics and changing competency requirements. The following section addresses the DOI MCOs in addition to those other occupations that are important to the USGS mission.

Wildlife Biologists

**Note: Wildlife Biologists fall into the Department of Labor's 2006-2007 Occupational Outlook Handbook, 2004-14, category as Zoologists and Wildlife Biologists*

- Between 2004 and 2014 this occupation is expected to grow 13% (2100 positions), with 730 annual job openings. Growth in the Federal Government is expected to be 4% (200 positions).
- A Ph.D. degree usually is required for independent research, but a master's degree is sufficient for some jobs in applied research or product development; a bachelor's degree is adequate for some nonresearch jobs.

- There will be many doctoral degree holders to fill basic research positions; Nonresearch positions will be available for those with bachelor's or master's degrees in biological science.
- Most employment growth will be in biotechnological research and development.
- Slightly more than half of all biological scientists were employed by Federal, State, and local governments. Other Federal agencies the USGS will be competing against for candidates include the U.S. Departments of Agriculture and Defense, as well as the National Institutes of Health. Most of the remaining scientists worked in scientific research and testing laboratories, the pharmaceutical and medicine manufacturing industry, or hospitals. In addition, many biological scientists held biology faculty positions in colleges and universities.

General Biologist

**Note: General Biologists fall into the Department of Labor's 2006-2007 Occupational Outlook Handbook, 2004-14, category as Biological scientists, all other*

- Between 2004 and 2014 this occupation is expected to grow 17% (5,100 positions), with 1,420 annual job openings. Growth in the Federal Government is expected to be 10.3% (1,700 positions).
- Slightly more than half of all biological scientists were employed by Federal, State, and local governments. Federal biological scientists worked mainly for the U.S. Departments of Agriculture, Interior, and Defense and for the National Institutes of Health. Most of the rest worked in scientific research and testing laboratories, the pharmaceutical and medicine manufacturing industry, or hospitals.
- There will be openings for those with a bachelor's or master's degree in biological science.

Hydrologists

- Between 2004 and 2014 this occupation is expected to grow 32% (2,600 positions), with 400 annual job openings. Growth in the Federal Government is expected to be 14.4% (300 positions).
- Federal, State, and local governments employ over half of all hydrologists.
- Although a bachelor's degree in an earth science is adequate for a few entry-level jobs, employers increasingly prefer a master's degree. A Ph.D. degree is required for most high-level research or college teaching positions.
- The USGS will face the toughest competition for this occupation from private-sector consulting firms, where the strongest job growth is expected.
- Demand for hydrologists will be spurred largely by public policy, which will oblige companies and organizations to comply with complex environmental laws and regulations, particularly those regarding ground-water decontamination, clean air, and flood control. Job opportunities also will be spurred by a continued general awareness regarding the need to monitor the quality of the environment, to interpret the impact of human actions on terrestrial and aquatic ecosystems, and to develop strategies for restoring ecosystems. Hydrologists will be needed to assess water availability and quality, mitigate the effects of saltwater intrusion, anthropogenic and natural causes of water pollution, and natural hazards such as floods and landslides.

- Computer skills are essential for prospective hydrologists. Students who have some experience with computer modeling, data analysis and integration, digital mapping, remote sensing, and geographic information systems will be the most prepared to enter the job market. A knowledge of the Geographic Information System (GIS) and Global Positioning System (GPS)—a locator system that uses satellites—is vital.

Geologists

**Note: Geologists fall into the Department of Labor's 2006-2007 Occupational Outlook Handbook, 2004-14, category as Geoscientists, except hydrologists and geographers*

- Between 2004 and 2014 this occupation is expected to grow 8% (2,300 positions), with 720 annual job openings. Growth in the Federal Government is expected to be 1.8%.
- The most common Education/Training Level is a Master's degree.

Geographers

- Between 2004 and 2014 this occupation is expected to grow 7% (100 positions), with 20 annual job openings. Growth in the Federal Government is expected to be 3%.
- A master's degrees is usually required for this occupation.
- About half worked for Federal, State, and local governments, mostly in the Federal Government. Other employers included scientific research and development services; management, scientific, and technical consulting services; business, professional, labor, political, and similar organizations; and architectural, engineering, and related firms.

Civil Engineers

- Between 2004 and 2014 this occupation is expected to grow 17% (39,200 positions), with 7,700 annual openings. Growth in the Federal Government is expected to be 14.4% (1,500 positions).
- A bachelor's degree is required for most entry-level jobs and continuing education is critical as technology evolves.
- Most (46%) are found in the architectural, engineering, and related services.
- Competition with the private sector for civil engineers will ebb and flow with economic slowdowns.
- All 50 States and the District of Columbia require licensure for engineers who offer their services directly to the public. Engineers who are licensed are called professional engineers (PE). This licensure generally requires a degree from an ABET-accredited engineering program, 4 years of relevant work experience, and successful completion of a State examination. Several States have imposed mandatory continuing education requirements for relicensure.

Contract Specialists

**Note: Contract Specialists fall into the Department of Labor's 2006-2007 Occupational Outlook Handbook, 2004-14, category as Purchasing Agents, except Wholesale, Retail, and Farm Products*

- Between 2004 and 2014 this occupation is expected to grow 8% (22,000 positions), with 9,010 annual job openings. Growth in the Federal Government is expected to be 4% (1,200 positions).

- Contracts specialists must know how to use both word processing and spreadsheet software, as well as the Internet. Other important qualities include the ability to analyze technical data in suppliers' proposals; good communication, negotiation, and mathematical skills; knowledge of supply-chain management; and the ability to perform financial analyses.
- Government employers are looking for persons who have a bachelor's degree in business and usually require a master's degree in business or public administration for top-level purchasing positions.
- Regardless of industry, continuing education is essential for advancement. Many specialists participate in seminars offered by professional societies and take college courses in supply management. Professional certification is becoming increasingly important, especially for those just entering the occupation.
- In private industry, recognized marks of experience and professional competence are the Accredited Purchasing Practitioner (APP) and Certified Purchasing Manager (CPM) designations, conferred by the Institute for Supply Management, and the Certified Purchasing Professional (CPP) and Certified Professional Purchasing Manager (CPPM) designations, conferred by the American Purchasing Society. In Federal, State, and local government, the indications of professional competence are Certified Professional Public Buyer (CPPB) and Certified Public Purchasing Officer (CPPO), conferred by the National Institute of Governmental Purchasing. Most of these certifications are awarded only after work-related experience and education requirements are met, and written or oral exams are successfully completed.

Financial Specialists

**Note: Financial Specialists fall into the Department of Labor's 2006-2007 Occupational Outlook Handbook, 2004-14, category as Financial Specialists, all other*

- Between 2004 and 2014 this occupation is expected to grow 14% (18,200 positions), with 4,050 annual job openings. Growth in the Federal Government is expected to be 4% (600 positions).

Budget Analysts

- Between 2004 and 2014 this occupation is expected to grow 13% (7,700 positions), with 1,720 annual job openings. Growth in the Federal Government is expected to be 4% (500 positions).
- Some government budget analysts employed at the Federal, State, or local level may earn the Certified Government Financial Manager (CGFM) designation granted by the Association of Government Accountants. Other government financial officers also may earn this designation. To do so, candidates must have a minimum of a bachelor's degree, 24 hours of study in financial management, and 2 years of government work experience in financial management. They also must pass a series of three exams that cover topics on the organization and structure of government; governmental accounting, financial reporting, and budgeting; and financial management and control. To maintain the CGFM designation, individuals must complete 80 hours of continuing professional education every 2 years.
- Many job openings will result from the need to replace experienced budget analysts who transfer to other occupations or leave the labor force.

Human Resources Specialists

**Note: Human Resources Specialists fall into the Department of Labor's 2006-2007 Occupational Outlook Handbook, 2004-14, category as Human Resources, Training, and Labor Relations Specialists, all other*

- Between 2004 and 2014 this occupation is expected to grow 24% (94,100 positions), with 6,830 annual job openings.
- The private sector accounted for more than 8 out of 10 salaried jobs and Government employed 17 percent.
- In filling entry-level jobs, many employers seek college graduates who have majored in human resources, human resources administration, or industrial and labor relations; other employers look for college graduates with a technical or business background or a well-rounded liberal arts education.
- An advanced degree is increasingly important for some jobs. Many labor relations jobs require graduate study in industrial or labor relations. A strong background in industrial relations and law is highly desirable for contract negotiators, mediators, and arbitrators; in fact, many people in these specialties are lawyers. A background in law also is desirable for employee benefits managers and others who must interpret the growing number of laws and regulations. A master's degree in human resources, labor relations, or in business administration with a concentration in human resources management is highly recommended for those seeking general and top management positions.
- Demand may be particularly strong for certain specialists. For example, employers are expected to devote greater resources to job-specific training programs in response to the increasing complexity of many jobs, the aging of the workforce, and technological advances that can leave employees with obsolete skills. This should result in strong demand for training and development specialists. In addition, increasing efforts throughout industry to recruit and retain quality employees should create many jobs for employment, recruitment, and placement specialists.
- Expect plenty of qualified college graduates and experienced workers to choose from.

IT Specialists

**Note: IT Specialists fall into the Department of Labor's 2006-2007 Occupational Outlook Handbook, 2004-14, category as Network and Computer Systems Administrators*

- Between 2004 and 2014 this occupation is expected to grow 38% (106,800 positions), with 13,770 annual job openings. Growth in the Federal Government is expected to be 13.6% (1,000 positions).
- Rapid job growth is projected over the 2004-14 period.
- The USGS should be looking for college graduates who are up to date with the latest skills and technologies; certifications and practical experience are essential for persons without degrees.
- The USGS will need to compete with hardware and software companies, where often specialist enjoy great upward mobility and advancement sometimes comes within months of one's initial employment. In addition, many employers assist specialists in keeping their skills up to date with continuing education programs.

- Job growth among computer support specialists reflects the rapid pace of improved technology. As computers and software become more complex, support specialists will be needed to provide technical assistance to customers and other users. New mobile technologies, such as the wireless Internet, will continue to create a demand for these workers to familiarize and educate computer users.
- The information security field is expected to generate many opportunities over the next decade as firms across all industries place a high priority on safeguarding their data and systems.

WORKFORCE BENCHMARKING

Organizational development efforts continue through the use of the USGS Organizational Excellence Model as a tool to analyze the linkage between organizational dimensions (people, processes, structures and leadership and management) and organizational performance in order to focus on the most critical levers for success and to effectively manage organizational change brought about by competitive sourcing, workforce adjustments and restructuring activities. To aid in this analysis, a USGS all-employee survey was conducted in the spring of 2007. Surveys of this nature will be administered on a recurring basis. This survey, coupled with the results of the Federal Human Capital Survey, provides very useful information that helps the USGS assess organizational excellence. Utilizing these results, the USGS management teams and the Director will develop strategies to address the findings and identify actions that benefit our science and our employees and will advance Interior's strategic plan.

STRATEGIES

Knowledge Management and Leadership Succession Planning

The USGS will continue to develop leadership skills and behaviors at all levels of the organization through an internal leadership training program, championed and participated in by USGS senior executives and augmented by online performance support tools and external leadership development resources. Since its inception in 1999, the USGS has had nearly 1500 managers and supervisors attend this leadership training. During FY 2008, the USGS will maintain its current program and longitudinal evaluation of that program, focus on identifying gaps in the leadership development pipeline, and experiment with additional training, coaching, or other performance support mechanisms to close those gaps. The USGS Core Competency Model for Managers creates a roadmap for a management career path and links to the tools and developmental opportunities that will support success. The USGS will use the Model to develop structured interview questions and input to the On-line Recruitment System for hiring into supervisory and managerial positions, use assessment of supervisory and managerial competencies to set priorities for supervisory and managerial training and development to increase supervisory and managerial performance at all levels. This model is designed to help build the competencies in the pool of eligible candidates

making them competitive for higher level positions, and ensure they have the necessary skills and abilities to succeed if they are selected.

Succession planning will also be accomplished through the USGS Mentoring Program. Originally focused on acculturation of new employees, this program has evolved to focus on succession planning and knowledge transfer at all levels of the organization.

Executive Succession Planning

The USGS utilizes various strategies to fill our Executive Resource needs. In addition to external broad-based recruitment strategies, the Bureau utilizes the Senior Executive Service Candidate Development Program to meet our succession planning needs. Participants learn cross-cutting management skills through the use of rotational assignments, Individual Development Plans, classroom work, on-the-job learning, mentoring, coaching, and Web-based learning.

In 2007, the USGS had six employees selected into the Program. This prestigious Program serves as an encouraging solution to the inevitable attrition of our Executives as the number of those eligible to retire rises.

Compensation

To the extent possible and appropriate, the USGS utilizes incentives available to managers such as recruitment, retention, and relocation bonuses for hard-to-fill positions and for those employees who are highly skilled and talents are in demand. Managers at USGS are educated on these flexibilities in the Supervisory Challenge course and flexibilities are reviewed with managers when advertising vacancies. Education has also been provided in the Eastern Region manager's toolkit, on the USGS Intranet, and at various management conferences.

The USGS also recognizes employees through various awards. Some of these awards can include Continuous Improvement Incentives, Productivity Improvement Award, Quality Step Increase, Special Thanks for Achieving Results (STAR) Awards, 12 different Honor Awards, and various non-monetary awards such as time off, length of service recognition, and honor awards.

The USGS is in its fourth year of promoting and educating its workforce on creating a rewarding environment. Since 2004, over 325 supervisors and managers have been trained on the importance of creating a rewarding environment, the important role they play, and specific actions they can take to help make the USGS a rewarding place to work. From the 2002 Organizational Assessment Survey to the 2007 Survey, the USGS has seen an 8% increase in employee's perceptions of the USGS as a rewarding place to work.

Performance Management

Organizational performance at USGS is used to align and make meaningful distinctions for executives and are then cascaded down to the employees through performance elements. These performance elements are linked to the Bureau's mission, goals, and outcomes; hold employees accountable for results appropriate to their level of responsibility; differentiate between various levels of performance; and provide consequences based on performance. Managers are expected to provide feedback to employees on a regular basis and hold mid-year reviews to evaluate employee performance. To ensure employees have performance standards in place and are being evaluated on an annual basis, random sampling is conducted throughout the Bureau. Managers and supervisors who attend the Bureau's Supervisory Development course are instructed in the area of performance management and additional training is provided within the Bureau on an as-needed basis.

To better support USGS leadership in aligning work plans to organizational priorities, in 2006, the USGS Human Capital program developed a performance management database for senior executives that includes all Government Performance and Results Act goals; DOI strategic goals; the Office of Management and Budget's Program Assessment Reporting Tool action plans; USGS strategic priorities; Congressional obligations; and other internal commitments. The database allows each of these commitments to be explicitly linked to individual senior executives. These executives are then provided reports to use in delegating commitments to subordinates through their performance plans. The database is web-enabled, allowing offices responsible for tracking the various commitments to directly access the information and maintain it without duplicating effort.

Employee-friendly Workplace

The USGS is committed to helping employees balance career and family. Various programs help employees cope with balancing the dynamic complexities of today's work and family life, including: Alternative Work Schedules (AWS), telework, physical fitness subsidies, child care subsidies, Employee Assistance Program, family friendly leave, and transportation subsidies.

Utilization of these tools and flexibilities help the USGS enhance the work environment and help to recruit and retain the workforce needed to achieve mission goals and objectives.

Restructure/Redeployment/Retraining Plans

In 2000, the USGS reorganized from a science division-based line management structure to a regional organization structure. Three regions were established with line authority for the management of the USGS mission and its various science, technical and administrative program activities within the region. In addition, a discipline-based science leadership structure was established to oversee Bureau-wide, discipline-

specific science programs that support the USGS mission, assure the long-term health of the science disciplines, and address new and emerging science issues. This reorganization established consistent regional boundaries, multi-disciplinary regional directors with line management responsibilities, and discipline-based regional executives to oversee discipline-based field science centers. The new organizational structure was designed to transform the USGS from a loosely linked confederation of scientifically-based organizational units into a Bureau with one mission and to enhance the ability of the USGS to bring a multidisciplinary approach to addressing complex societal issues. This reorganization has served the USGS well and facilitated the accomplishment of integrated science projects.

In 2005, the USGS leadership began to analyze the benefits of the 2000 reorganization and began formulating options for additional organizational changes to further support the desired result of bringing the Bureau's diverse scientific capabilities together to address complex issues. The leadership acknowledged that establishing multi-disciplinary regional directors had advanced the Bureau's goal of integrating the sciences. Over the next 2 years, various study groups were established to consider what, if any, additional structural changes should be made, and in 2007, a design team composed of members of the executive leadership team recommended that the Bureau further integrate the sciences by taking a geographic-based approach to managing field science centers.

The USGS, in accordance with recommendations from prestigious outside groups such as the National Academy of Sciences, is focusing more on multidisciplinary approaches to large scale scientific issues such as climate change, land-ecosystem preservation, energy development, water availability, human health, and hazards by realigning regional discipline-based executives into area-based executives. This realignment will allow the USGS, through its Regional Executives (REx's), to focus on a complete range of the USGS research and operational capabilities to meet our highest national and regional scientific challenges.

Modifying the leadership structure that is located across the landscape will facilitate the ability of the Bureau to maintain relevancy in a climate of rapid external change and increasing competition. The realignment will help USGS to develop new integrated scientific products and services that are regionally focus, broaden our external customer and partner base, and achieve internal efficiencies across our various business models. The realignment builds on progress made during the FY 2000 reorganization and helps to right-size the management structure to fit an organization that is 12 percent smaller than it was 7 years ago.

Competitive Sourcing

Business Strategy Reviews continue to be underway throughout the Bureau. These reviews are a preliminary step in determining whether cost-savings and greater efficiency can be achieved by competitively sourcing or reengineering all or parts of the business area—or leaving it as it is. The reviews take into consideration future

program/function directions; organizational and geographic structures; current and future workforce skills; and those activities that need to be accomplished by USGS employees. In FY 2008, USGS will begin implementing the recommendations of Business Strategy Reviews (BSR) conducted on Information Technology and Administrative Management.

Technology Solutions

The USGS has developed a skills and competency library for technical occupations and science supervisors and managers. We are poised to integrate this tool with the Department of Interior's Learning Management System (DOI Learn). This tool will be used to help analyze the skills and competency needs across the Bureau. From this, we will be able to develop succession strategies, prioritize and deliver training and development, and develop technology-enabled learning to meet high priority dispersed training needs.

Since 2000, all applications for employment are managed electronically, a key contributor to successfully achieving and maintaining an average that is below the Department's 45-day hiring model targets. Hiring officials, working in consultation with a human resource specialist, have online access to an electronic position description creator and a library of key questions used to evaluate knowledge, skills, and abilities of applicants. In addition, hiring officials have online access to information about hiring strategies, interviewing techniques, checklists, and questions to consider when considering a recruitment action. When vacancies are posted, the system automatically e-mails information to numerous contacts to advertise the vacancy. Potential applicants can register to receive automatic notifications of job announcements that meet their customized criteria, and applicants receive automatic e-mail notices as decisions are reached on selections.

To reduce travel costs and improve access to scientific and technical training, the USGS Human Capital (HC) program developed a deployable electronic classroom in 2004 that consists of a set of 12 robust laptop computers that are networked together and pre-loaded with the software needed to conduct a wide variety of training. The deployable classroom is shipped to remote locations and is easily set up in a matter of hours. In 2007, a second deployable electronic classroom was purchased and configured so that either a larger class could be held or two classes could be simultaneously supported.

In addition to the training center and the deployable classroom, in 2005, the USGS HC programs began developing technology-enabled learning. This technology supports both synchronous and asynchronous training for scientific, technical, and administrative topics. Technology-enabled learning is built by taking each learning objective of a course on its own content and using a medium that will best communicate and transfer it to the learners. These media may include, but are not limited to, synchronous live events, discussion boards, video, narration, classroom (face to face), self-paced, web-based training, and more. These technologies reduce costs and provide access to

training to a larger pool of students. They also provide a mechanism for subject matter experts from across the USGS to create and deliver training in highly specialized subjects, provide standardized science and technical skills training, and reduce duplication of effort.

Recruitment and Hiring

Recruitment and hiring at the USGS has been enhanced by the Office of Personnel Management's Career Patterns Initiative. The Human Resources Offices reviewed and analyzed current vacancy announcements for the Hydrologist occupation against the features associated with the Career Pattern scenarios. As a result, changes were made to our marketing statement, which includes additional links to provide more information about each of our science programs. In addition, our benefits section was amended and a link was provided to offer additional information with regard to health/life/retirement benefits; leave and flexible work schedules. From this, we then extended these strategic changes into all of our occupation's vacancy announcements. We believe these changes will make the USGS a more attractive employer to potential candidates.

In the near future, the USGS will evaluate the impact of the Career Patterns initiative by analyzing the applicant rate and determining if it in fact has been effective in recruiting and hiring quality candidates.

The USGS extensively utilizes a variety of programs that provide students the ability to contribute to the overall mission of the USGS while providing them with personal and professional development opportunities. These include the Student Career Experience Program (SCEP) and Student Temporary Employment Program (STEP) under the Student Educational Employment Programs (SEEP), as well as the Presidential Management Fellows Program, and the Mendenhall Postdoctoral Research Fellows Program. Additional programs include a myriad of regional recruitment and training programs specifically designed to identify, recruit and retain diverse student employees in targeted occupational series. USGS recognizes that there is an ongoing need to recruit and develop talented student employees to support the USGS mission, address the skills gaps we are facing, ensure we are meeting our professional, technical and administrative needs (both now and in the future), and achieve a quality and diverse workforce.

Training and Professional Development

The USGS mission relies heavily on maintaining a skilled workforce. The USGS HC program operates a scientific and technical training center at the Denver Federal Center in Lakewood, CO. On average, more than 50 courses are conducted annually to a student population of nearly 1,000. As described in the Technology Solutions section, the USGS HC program developed a deployable electronic classroom in 2004 and purchased a second larger one in 2007. These investments have not only reduced travel costs, but have improved access to scientific and technical training as well. Also

described in the Technology Solutions section, the USGS HC programs began developing technology-enabled learning in 2005.

A Human Capital focus in FY 2008 will be the assessment and evaluation of strategies and tools for workforce and succession planning, including the use of the mentoring program as a succession planning tool. Additionally, data from the competency management tool in the Exceed Module of the Learning Management System will be used to focus attention on mission critical occupation competencies and guide the development of strategic training and development plans in the USGS.

VERA/VSIP

The use of Voluntary Early Retirement Authority (VERA) and Voluntary Separation Incentive Program (VSIP) within the Bureau has proven to be a valuable tool in helping reshape the workforce, adjust the needed skill sets identified in workforce plans, and address anticipated financial challenges in order to better position the organization for the future. Favorably looked upon by management and the workforce, these authorities are viewed as an employee-friendly tool that enables the organization to meet its strategic and budgetary goals in a fiscally responsible manner. Since 2001, the Bureau has seen successful use of this tool in all areas of the organization, allowing them to realize substantial savings that can then be redirected to the needed science areas. For example, for the Western and Central Hazards Teams of the USGS, this tool has enabled them to change the workforce demographics and increase their ability to meet critical new demands, such as 24/7 monitoring. With continued use of this tool, the Bureau will be better positioned to meet changing program goals and priorities that need a different balance of workforce skills and carry out new strategic opportunities and directions in the face of level or decreased funding.

Action Plans

Collaboration and Partnering

Collaboration and partnering are two competencies that are critical to the success of USGS's reimbursable and cooperative scientific programs, which are carried out with numerous local, State and Federal agencies, academia, Indian tribes, and foreign governments. Greater knowledge of the tools available to broaden and strengthen the use of partnering and collaboration are valuable as the USGS implements our Science Strategy.

Collaboration and Partnering – Action Plan

Mission Challenges	Solution/Activity	Milestones	Responsible Party	Schedules and Deadlines	Resource Needs	Communication Plans
Successful Collaboration and Partnering with local, State and Federal agencies, academia, Indian tribes, and foreign governments	Develop Collaboration and Partnering Competencies in Hydrologist and Geologist Occupations	Identify and finalize competencies associated with collaboration and partnering skills	Human Capital Office (HC)	December 31, 2007	Human Capital Office employees and hydrologist and geologist manager and supervisor input	Communicate identified competencies to all appropriate parties
		Assess and analyze the gap through supervisory observation of skill level	HC Office	March 31, 2008	Hydrologist and geologist managers and supervisors	
		Develop Action Plan for closing gap, starting with the recently developed Collaboration Workshop	HC Office	June 30, 2008	HC employees	Communicate and reach agreement on action plan with all appropriate parties
		Develop Collaboration Workshop Summary Website	HC Office	December 30, 2007	HC employees	Promote and advertise new website throughout the Bureau
		Develop Collaboration Community of Practice Website	HC Office	December 30, 2008	HC and C&P Committee	Promote and advertise new website throughout the Bureau
		Implement Plan	HC Office	September 30, 2008	HC employees, hydrologist and geologist managers, supervisors, and employees	
		Measure Results	HC Office	December 31, 2009	HC employees, hydrologist and geologist managers and supervisors, and employees	Communicate results to appropriate parties
		Re-examine and modify competencies as necessary	HC Office	Ongoing	HC employees, hydrologist and geologist managers, supervisors	Communicate results to appropriate parties

Supervisory Development Review – Action Plan

Mission Challenges	Solution/Activity	Milestones	Responsible Party	Schedules and Deadlines	Resource Needs	Communication Plans
Leadership Succession Planning	Supervisory Development Review Outcomes	Communication Strategy for Selection Process Implementation	All Office of Organizational and Employee Development	Immediately	Human Capital Staff	Implemented for October SC class
		Competencies Development Options Matrix	All Office of Organizational and Employee Development	FY 2008	Consultant Est: \$5K	
		Supervisory Development Roadmap	All Office of Organizational and Employee Development	FY 2008	Human Capital Staff	New Supervisor Packet
		Supervisory Development Program Model	All Office of Organizational and Employee Development	FY 2008	Human Capital Staff	
		Change/add course content –	HR, OED, OEO	Oct 2007 & FY 2008	Human Capital Staff & Consultant	Partially implemented in October SC class
		Review USGS sup. Development activities against Rev Team results and as a result develop comprehensive USGS Sup Dev Policy	All Office of Organizational and Employee Development	FY 2008	Human Capital Staff	Through codified USGS Survey Manual Policy
		Develop conferences/workshops for supervisors	All Office of Organizational and Employee Development	FY 2009	Human Capital Staff	
		Finalize Sup.Chapter in USGS Manual	HR	FY 2008 2007	Human Capital Staff	
		Finalize Probationary Supervisor Memo & Policy	HR	FY 2008	Human Capital Staff	

Best Practices

The USGS's Human Capital program was recently selected to receive the prestigious Leading Edge Award sponsored by the International Public Management Association for Human Resources for our efforts in strategic human capital management. Noted below are two best practices from this Office.

USGS Leadership Programs

In 1999, results from an all-employee assessment indicated that employees didn't think that the USGS valued leadership characteristics. In response, the Leadership Development Program was designed and developed to address this area of concern. Two leadership development courses, taught 18 months apart, were created to address individual awareness, teamwork, creativity and innovation, problem solving, and emotional intelligence. Using 360-degree assessments, participants learn about their leadership qualities and develop individual and organizational action plans to enhance their strengths and improve their leadership competencies. These assessments also serve as the data source for a research project focused on determining the effectiveness of the Leadership Development Program and the diffusion of leadership behaviors from program participants to non-program participants. Early results indicate a statistically relevant correlation between the behaviors of course participants and the perceptions of their leadership qualities by their supervisors, peers, and employees. In the book, *Evaluating Training Programs* by Donald L. Kirkpatrick and James D. Kirkpatrick published in late 2006, Chapter 16 is devoted to the USGS Leadership Development Program's evaluation study methodology and findings. Additionally, a leadership and management resource library was established, a leadership performance support website, and an annual and very prestigious "excellence in leadership" award is presented.

USGS Mentoring Program

Another example is the USGS Mentoring Program, which was developed based on analysis that showed turnover rates at the entry level that were higher than desired. The program was originally focused on acculturation of new employees but quickly evolved to focus on succession planning and knowledge transfer. The Mentoring Program has both formal and informal components. The formal program focuses on employees with less than 5 years of service with the USGS. Individuals are self-nominated and must have supervisory approval. Mentors are carefully screened and matched with protégés, who complete an in-depth application that helps them identify their desired priority outcomes from the mentoring. The formal component lasts for 1 year and consists of a face-to-face shadowing opportunity at the beginning to help the mentor and protégé create a shared set of goals and objectives. The informal component is for anyone who wants help finding a mentor and establishing a productive mentoring relationship. The Mentoring Program provides training and resources, and conducts monthly cyber-seminars on a variety of topics to reinforce and stimulate the mentoring relationships. This program was highlighted in a June 25, 2007, Human

Resources Special Report in the Federal Times. Since publication, the USGS has received numerous inquiries from other Federal agencies requesting assistance with establishing similar programs.

RESOURCES AND INVESTMENT

Over the course of several years, the USGS has reduced the size of its workforce from 12,000 to 8,000 employees. Faced with flat budgets in real dollars, the Bureau has realized savings by reorganizing where appropriate as well as employing the use of flexibilities such as Voluntary Early Retirement Authority and Voluntary Separation Incentive Payments. Any costs saving realized through these means has been absorbed quickly by the need to reinvest in skill sets critical to meeting future programmatic goals.

The strategies we deploy will largely depend on the criticality of the programs and then funding availability. We will continue to utilize workforce flexibilities available to us in order to meet the goals identified in this workforce plan.

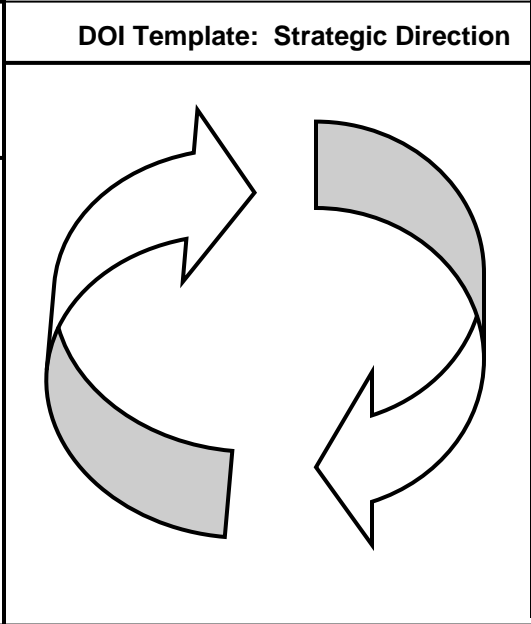
APPENDICES

Appendices A and B are the U.S. Geological Survey's Workforce Plan Model and Guided Inquiry that are recommended for use in the Bureau's organizational reviews.

- A. U.S. Geological Survey Workforce Planning Model
- B. U.S. Geological Survey Workforce Planning Guided Inquiry

Phase I Set Bureau Strategic Direction
<p>Set strategic goals. Determine future functional requirements of the workforce through the Bureau's strategic planning and budgeting process</p> <ul style="list-style-type: none"> • Budget Projections • Strategic/Science Plans • Emerging Science/Societal Issues • Future Science Directions • External Drivers – e.g., <ul style="list-style-type: none"> ○ Competitive Sourcing ○ Technology Impact ○ FTE Limitations <p>Establish workforce goals</p>
Phase III Implement Workforce Plan
<ul style="list-style-type: none"> • Communicate workforce plan. • Identify opportunities to move the organization and workforce toward the strategic goals. • Implement strategies to reduce gaps and surpluses. <ul style="list-style-type: none"> ○ Recruitment/Retention ○ Training/Retraining ○ Competitive Sourcing/Partnering ○ Leadership Development ○ Succession Planning ○ Career Transition ○ Pipeline <p>DOI Template: Solutions and Implementation</p>

Phase IV Monitor, Evaluate, and Revise
<ul style="list-style-type: none"> • Measure: Assess USGS progress in achieving science and business goals. Measure effectiveness, flexibility & responsiveness. • Assess progress in achieving workforce goals. • Address new organizational issues that affect the workforce. • Make adjustments to the workforce plan.



Phase II Conduct Workforce Analysis
<ul style="list-style-type: none"> • Analyze supply: determine current workforce profile. • Analyze demand: develop future workforce profile. • Analyze gap: identify discrepancy between supply and demand analysis. • Develop strategy: recommend solutions to reduce shortages and surpluses in staff and skills, considering issues such as diversity. • Establish targets, e.g. Perm/Other • Write workforce plan.

USGS Workforce Plan Guided Inquiry Phase I

Strategic Direction

Describe the organization's mission, strategic goals, objectives, and business functions. Determine what changes, if any, may take place over the next five years that could affect mission, objectives, and strategies.

Core Information

- USGS mission
- USGS strategic goals and objectives
- Budget projections
- Science plans
- Future science directions
- Common business practices
- Anticipated changes to the mission, strategies, and goals over the next five years

Additional Considerations

- What are the key economic and environmental factors facing the Bureau?
- What are the key issues and challenges facing the Bureau that will affect the mission, strategies, or goals?
- What are the emerging science issues the Bureau must address?
- What are the current customer demands compared to customer demands predicted for the future?
- What are the Departmental and Administration initiatives that will affect us?
- What are the budgetary and program issues affecting cooperators and partners?
- What are the Bureau's long-range business plans?
- How is the Bureau currently organized and structured?
- How will the Bureau structure look in five years and how will the current structure evolve?

Phase II

Current Workforce Profile (Supply Analysis)

Profile the demographics and skills of the current workforce.

Core Information

- Demographic information to include age, gender, race, and tenure
- Percentage of workforce eligible to retire within the next five years
- Agency turnover
- Projected employee attrition rate over the next five years

- Workforce skills critical to the mission and goals of the Bureau
- Trends – attrition, hiring, etc.

Additional Considerations

- What will be the skill and experience level of the current workforce five years into the future?
- How will the expected attrition rate affect the Bureau's ability to do its work?
- What challenges affect the Bureau's ability to recruit and retain mission critical skills?

Future Workforce Profile (Demand Analysis)

Determine workforce profile needed to achieve the Bureau's strategic goals.

Core Information

- Critical functions that must be performed to achieve the strategic plan
- Expected organizational and workforce changes driven by factors such as changing mission, goals, strategies, business changes, technology, collocation, work, workloads, and/or work processes
- Anticipated workforce and workforce characteristics (profile/demographics) needed to do the work
- Future workforce skills needed

Additional Considerations

- Will new programs be added or old programs deleted?
- How will jobs and workload change as a result of technological advancements; industry changes; and economic, social and political conditions? What are the consequences/results of these changes?
- Can or must we change the way the work is being done?
- What is the appropriate mix of permanent staff, contingent staff, and outsourcing?

Gap Analysis

Identify gaps (shortages) and surpluses (excesses) in staffing and skill levels needed to meet the functional requirements.

Core Information

- Anticipated surplus or shortage of employees to meet current and future needs
- Anticipated surplus or shortage of skills to meet current and future needs

Additional Considerations

- What new skills will the Bureau need to accomplish its mission and goals?
- What skills are needed to meet current and near term requirements?
- What job functions/skills will no longer be required?

Strategy Development

Develop strategies for organizational and workforce transition.

Core Information

- List specific strategies to address workforce skill gaps or surpluses (may include the following):
 - Changes in organizational structure
 - Retention programs
 - Recruitment plans
 - Career development programs
 - Succession planning
 - Leadership development
 - Organizational training and employee development
 - New or evolving technology
 - Career transition
 - Identification of barriers and solutions
 - Competitive Sourcing/Partnering
 - Pipeline for future employees

Additional Considerations

- What will the Bureau do about its surplus or shortage?
- What will the Bureau do differently in its recruiting, training, and retention programs to ensure it has, and will continue to have, a high-quality, diverse workforce with the skills vital to accomplishing its mission?
- How will the Bureau address staffing or skill imbalances due to changing programs, turnover, and retirements during the next three to five years?
- How will individuals for leadership positions be identified, assessed, and developed?
- How will the Bureau ensure a common vision and movement toward the strategic direction and goals?
- What functions will be contracted out? Which employees will be affected?
- What are the strategies that we must develop to address shortages or surpluses and other workforce issues?

Based on State of Texas Workforce Planning Model, SAO Report No. 02-322
<http://www.hr.state.tx.us/Workforce/guide.html>