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## PERFORMANCE AND MANAGEMENT

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## 7. DELIVERING A HIGH-PERFORMANCE GOVERNMENT

The work of the Federal Government has a real effect on people's lives – on small business-owners who need loans, on young people who want to go to college, on the men and women in our Armed Forces who need the best resources when in uniform and who, after they have served, deserve the benefits they earned. Whether protecting individuals and communities, modernizing infrastructure, investing in our children, or taking care of the most vulnerable, the American people deserve a highly effective government.

The Nation's current fiscal situation makes it more important than ever for government agencies to use taxpayer money wisely to achieve more mission for the money. Building a government that works smarter, better, and more efficiently to deliver results for the American people is a cornerstone of this Administration. This chapter discusses the Administration's approach to improving the performance of the Federal Government, progress of this effort, challenges remaining, and the path forward.

### Driving Federal Performance

We must use taxpayer dollars in the most effective and efficient ways we can, continually searching for smarter ways to serve the American people, businesses, and communities. A critical part of our effort is creating a culture of continual performance improvement where Federal agencies constantly strive to improve the quality of Americans' lives and find lower-cost ways to achieve positive outcomes.

The Administration's approach to delivering more effective and efficient government is straightforward, and builds on a careful examination of best management practices in the Federal Government, State and local governments, other countries, and businesses (described in the President's 2011 and 2012 Budgets). The Administration has built on these lessons learned, and the groundwork established by Congress and previous Administrations. This approach rests on three mutually reinforcing practices.

1. **Choose Areas of Focus and Clear Goals.** Leaders at all levels of the organization choose a limited number of areas of focus that have high potential to advance the well-being of the American people, cut the costs of delivery, or both. Where goals are likely to accelerate progress, leaders set clear, ambitious goals for outcome-focused and management priorities. For each area of focus, senior officials responsible for leading change are clearly identified and goals are clearly communicated to employees, delivery partners, and the public.
2. **Measure and Analyze Performance.** Agencies measure, analyze, and discuss performance infor-

mation to reinforce priorities, motivate action, and illuminate a path to improvement. They analyze data to find problems to fix, successful practices to spread, and the root causes of both. Armed with this understanding, they take actions to achieve better outcomes and cut the costs of delivery. Agencies also communicate goals, measurements, progress, and strategies to enlist external ideas, expertise, and assistance to improve performance and boost accountability.

3. **Deliver Better Results with Frequent, Data-Driven Reviews.** Leaders conduct frequent, in-depth performance reviews to drive progress on priorities. They review progress with those involved in implementation and adjust agency action quickly, as needed, to improve outcomes and reduce costs.

### Progress on Agency Priorities

The Administration's performance management approach is fueling progress on performance and productivity. Federal agencies are widely adopting these performance improvement practices and beginning to see changes on the ground. Leadership engagement, not just in goal-setting but in running frequent progress reviews to identify actions an agency can take to improve results, is on the rise across the Federal government. At the same time, agencies are learning how outcome-focused goals can help them break down organizational barriers, leading to better results than one agency can achieve on its own. As described in "Reducing Crime on Indian Reservations" on the following page, efforts at the Department of Interior to reduce crime on Indian reservations exemplify how these practices can coalesce to produce breakthrough performance.

Performance results like this are not limited to Interior; other agencies are also making great progress on their mission-focused priorities, some of which they identified as two-year Agency Priority Goals (introduced as High Priority Performance Goals) in the 2011 Budget.

#### *Streamlining Student Loans and Strengthening Teacher Evaluation Systems*

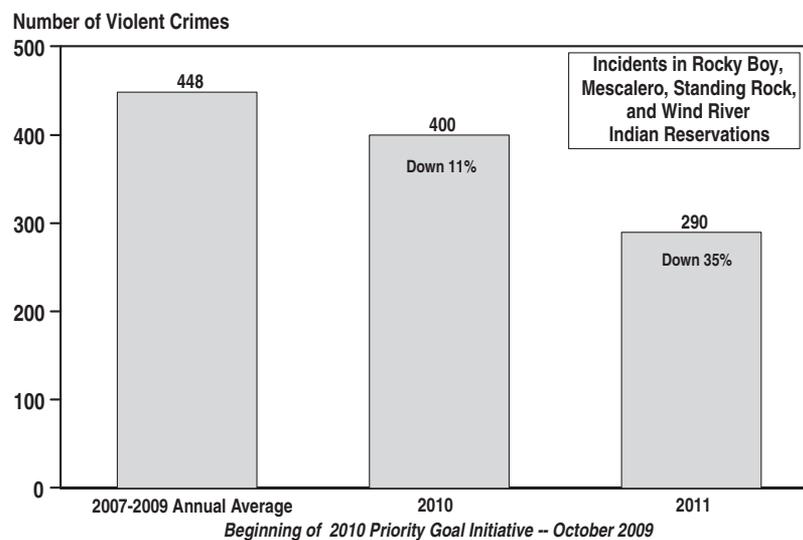
The Department of Education (Education) set a goal that all participating higher education institutions and loan servicers will be operationally ready to originate and service Federal Direct Student Loans through an efficient and effective student aid delivery system with simplified applications and minimal disruption to students. Within six months of the enactment of the Student Aid and Fiscal Responsibility Act (SAFRA), Education successfully moved to making students loans directly instead of hav-

### REDUCING CRIME ON INDIAN RESERVATIONS

High crime rates on some Indian reservations have long been a public concern, especially to the Native American community at large. The Department of the Interior's (Interior) pilot program to reduce crime on Indian reservations demonstrates how transformative it can be when an agency adopts a goal that matters to a community, takes actions to address the problem, regularly measures and reviews relevant data to see if change is happening, and engages the local community in every aspect of the effort. To seek solutions to this long-standing issue – but given tough constraints on its budget – Interior started a pilot program to test and identify effective crime reduction strategies on Indian lands. In the 2011 Budget, Interior set an agency High Priority Performance Goal to reduce crime by at least 5 percent on four reservations with some of the highest crime rates.

When this goal was set, most considered it ambitious; Interior had never before adopted a crime reduction goal and does not control many of the factors that affect the crime rate. Nevertheless, by the end of 2011, the initiative far exceeded its goal, reducing violent crime, on average, by a remarkable 35 percent across all four reservations, with crime going down on three of the four.

**Chart 7-1. Safe Indian Communities Priority Goal**



The importance and resonance of the goal won the cooperation of law enforcement partners and the enthusiasm of the local communities. This enabled a comprehensive strategy that involved community policing, tactical deployment, and inter-agency and intergovernmental partnerships between the Federal Bureau of Investigations (FBI), Department of Justice (DOJ), and the tribal police departments. The number of Indian country and DOJ officers on the ground was doubled and the number of law enforcement officers who received basic training increased ten-fold. Interior also supported officer-initiated programs to help victims and their families along with programs to strengthen community relationships with law enforcement. Community-launched innovations also played a role, such as an initiative on Rocky Boy's Reservation in Montana to reduce juvenile delinquency and criminal behavior.

Recognizing the importance of fresh and actionable data, Interior has now established a computer-aided system to help analyze crime data, identify crime trends, and report criminal offenses. These data and trend analyses were used to allocate resources and to evaluate law enforcement and community policing strategies.

The results strongly affirm the value of a data-based, goal-oriented approach that empowers local officials to drive change. In the next two years, Interior is seeking to spread this success, starting with a replication demonstration at two new reservations, while continuing efforts on the original four reservations.

ing third party lenders make them. This lending approach serves students better and, according to Congressional Budget Office estimates, will save taxpayers more than \$60 billion over ten years. Education is also supporting and encouraging states to strengthen teacher evaluation systems given the evidence that teacher effectiveness contributes more to improving student academic outcomes

than any other school characteristic. Education has made considerable progress – forty-one states adopted such systems over the last two years.

#### ***Improving Health and Well-Being***

To improve not just the education of students but other aspects of their well-being, the Department of Agriculture

(USDA) set a goal to partner with local schools, propose national standards, and take other actions that will result in improved quality of food sold in schools throughout the school day. Since 2009, USDA has signed up over 1600 more schools for its Healthier US School Challenge, a program that certifies schools as meeting rigorous quality standards for the food they offer. In addition, toward its goal of improving the availability and accessibility of health insurance coverage by increasing enrollment of eligible children in Children's Health Insurance Program (CHIP) by 9 percent over the 2008 baseline and increasing enrollment of eligible children in Medicaid by 11 percent over the 2008 baseline by the end of FY 2011, the Department of Health and Human Services (HHS) enrolled an additional 4.8 million children in the CHIP and Medicaid from 2008 to 2010, thus providing greater access to health care.

Agencies are working to improve the well-being of adults, as well. To save lives and tens of billions of dollars in Medicare and Medicaid costs, HHS launched the Partnership for Patients and set a new Priority Goal to reduce the rate of hospital acquired conditions and hospital readmissions. More than 3,100 hospitals and nearly 3,500 other partners, such as physician, nurses groups, and employers, have already joined this initiative. HHS has adopted a 2012-2013 Priority Goal focusing on reducing hospital associated infections reflecting this effort. Working in conjunction with the Interagency Council on Homelessness, the Departments of Veterans Affairs (VA) and Housing and Urban Development (HUD) set a goal to reduce the population of homeless veterans to 59,000 by June 2012, and have reduced the population of homeless veterans from 75,609 in January 2009 to 67,495 in January 2011. Building upon this progress, VA and HUD set a Priority Goal to house another 24,400 Veterans by the end of 2013 on the way to eliminating veteran homelessness by 2015.

### ***Energy Savings for Low-Income Families and Clean Energy Production***

The Department of Energy (Energy) and the Department of Housing and Urban Development (HUD) set a joint goal to enable the cost-effective energy retrofits of 1.2 million housing units by the end of 2013. By supporting energy conservation in over 750,000 homes of lower income and middle class families, Energy has already helped reduce energy costs, on average, by over \$400 per home each year. These changes have reduced the overall annual energy consumption by 20 percent for these homes, but also cut annual greenhouse gas emissions nearly 2.0 million metric tons. HUD similarly reduced energy consumption at 120,000 HUD-assisted housing units. Energy, in the same period, has invested in reducing the cost of batteries for electric drive vehicles to help increase the market for Plug-In Hybrids and All-Electric Vehicles.

Not surprisingly, because agencies were asked to set stretch targets to reach higher levels of performance, agencies did not attain every Priority Goal. In fact, if every target had been met it would indicate that the goals

were insufficiently ambitious - not bold enough to spur the sort of innovation and focus associated with challenging but realistic targets. The experience of Interior on its energy goal illustrates not just the performance-improving power of a stretch target but also of the Administration's emphasis on performance progress, rather than goal attainment for its own sake, to create a healthy performance-improving dynamic across the Federal government. Interior set a goal to authorize 9000 megawatts of solar, wind, and geothermal energy projects by the end of 2011. It did not reach its target, but did approve more than 6,000 megawatts of new renewable energy capacity on Interior land - enough to power, when fully developed, more than 1 million homes. Prior to setting this goal in October 2009, Interior had approved only a small number of projects like this. It had a slower than expected start-up because it had to move along a learning curve, yet by setting a stretch goal in this area Interior was highly successful - permitting more than 6,000 megawatts in 2 years. To continue progress in this area, Interior set a new Priority Goal to increase the approved capacity for production of renewable energy resources to 11,000 megawatts by the end of 2013.

### ***Strengthening Small and Medium-Sized Businesses***

The Small Business Administration (SBA) increased small business access to capital by growing the number of active lending partners and bringing 1,200 new or returning lenders into the 7(a) loan program. Loans approved by active lenders reached nearly \$20 million in 2011, up from \$12 million in 2010 and \$9 million in 2009. The Department of Commerce (Commerce) increased the number of small and medium-sized enterprises that entered a 2nd or additional market, not quite reaching its 2011 target but nonetheless up 20% between 2009 to 2011 (over 3000 businesses in 2011) despite staffing decreases and modest global economic growth in that period. Commerce has adopted a new 2012-2013 Priority Goal to expand its export activity, one of many strategies outlined in the National Export Initiative (NEI) report that contribute to the President's directive to double U.S. exports by 2014, a new Cross-Agency Priority Goal.

### ***Improving Water Quality and Aquatic Health***

Commerce has also worked closely with Regional Fishery Management Councils (RFMCs) to end and prevent overfishing. The agency set a goal to reduce the number of stocks subject to overfishing to zero by the end of 2011; improve the Fish Stock Sustainability Index (FSSI) to 586 by the end of 2011; and ensure that all 46 Federal fishery management plans have required catch limits to end overfishing in place by the end of 2011. By the end of December 2011, all stocks subject to overfishing had annual catch limits in place, and the Fish Stock Sustainability Index rose from 565.5 (in 2009) to 598.5. At the same time, the effort to ensure all Fishery Management Plans have annual catch limits is moving forward at a steady pace. Forty Fishery Management Plans have been completed as of December 31, 2011 and

six will be completed in time to be effective for the respective 2012 fishing years.

In other agency efforts related to aquatic health, the Corps of Engineers completed 27 projects restoring over 12,000 acres of aquatic habitat, most of it to improve the Upper Mississippi River, surpassing its goal of 10,300 acres. In a separate effort to improve the health of the Nation's waters, the Environmental Protection Agency (EPA) focused approximately 60% of its water quality enforcement actions on facilities discharging to waters that do not meet water quality standards, up from 32 percent in 2009 and well above the agency's goal of at least 37 percent. This resulted in reductions in harmful discharges from 195 facilities into these waters.

### ***National Security***

One of the Department of State's goals is to improve global controls to prevent the spread of nuclear weapons and enable the secure, peaceful use of nuclear energy. The 2010 Nuclear Security Summit moved the U.S. closer to this goal by strengthening international cooperation to control weapons-usable nuclear materials and prevent nuclear terrorism - actions critical to our own national security. Attending states pledged specific national actions to prevent terrorists, criminals, and proliferators from acquiring nuclear materials, ranging from ratification of a convention to extremely complicated steps converting reactors from the use of highly-enriched to low-enriched uranium. The number of countries ratifying the Amendment to the Convention on Physical Protection of Nuclear Materials (CPPNM) is now at 52, up from 20 at the end of 2008.

### ***Improving Customer Service and Saving Taxpayer Dollars***

Both the Department of the Treasury (Treasury) and the Social Security Administration (SSA) are making it easier for their customers, while saving taxpayer dollars. Treasury has saved over \$63.9 million by encouraging taxpayers to file electronically - increasing the electronic filing rate for individual tax returns to 76.9 percent in the 2011 season, up from 66 percent in 2009. SSA increased online retirement benefit applications from single digits in most prior years to the highest usage ever - 41 percent in FY 2011. These online services reduce the time employees spend handling applications, which frees them to handle other work. SSA has achieved this success while maintaining high customer satisfaction. The online claim application is one of three SSA electronic services that consistently tops the American Customer Satisfaction Index survey, rating higher than popular private sector electronic services.

Despite this progress, some agencies did not meet their goals because of fiscal pressures. While the Priority Goals were intended to be budget neutral, they were not budget independent. For example, in the President's 2011 Budget the Social Security Administration had a target for completing 3.409 million initial disability claims. However, Congress appropriated \$1 billion less than the President requested and the agency could not complete all of the

work related to their disability programs. To compensate for this, SSA decreased its target for the number of initial disability claims completed to 3.273 million. The agency was able to leverage technology to identify and fast-track the most severe disability claims. From October 2010 through June 2011, the agency fast-tracked over 108,000 initial disability cases, or 4.6 percent of all disability claims filed through the two fast-track processes. Learning from this experience, SSA continues to refine the predictive model and selection software to maximize capacity and accurately identify these cases.

More complete performance updates on the 2010-2011 Agency Priority Goals and other agency performance goals for the 15 Cabinet agencies and nine other large departments can be found at each agency's Performance.gov home page (click on the annual performance plans and reports button or access all 24 agency plans and reports at <http://my-goals.performance.gov/agency/plans>). Updates on government-wide management priorities established under the Accountable Government Initiative can also be found at Performance.gov under the Area of Focus tabs.

### ***Building a Culture of Continual Performance Improvement***

Agency heads have charged their leadership teams with transforming the way their agencies use goals, measurement, analysis, and data-driven discussions to drive performance improvements. This transformation is increasingly evident. As discussed above, agencies are using goals not just as words on the pages of reports required by Congress or OMB, but instead as simple, powerful tools for communicating priorities and focusing agency action. Complementing progress on the Agency Priority Goals, this budget continues efforts to integrate performance more directly into the use of traditional government tools such as grants. Race to the Top grants, for example, are being used to enlist state and local education leaders willing to commit to rigorous standards and high-quality assessments, build better data systems to inform decisions and improve instruction, attract and retain great teachers, and adopt the most promising evidence-based practices to turn-around the lowest performing schools. Similarly, HHS has established stronger performance expectations for its early childhood grants, requiring Head Start grantees that fail to meet rigorous benchmarks to re-compete for continued Federal funding to help children from low-income families achieve their full potential.

As discussed in AP Chapter 8: Program Evaluation and Data Analytics, a number of agencies have begun to use tiered grant-funding to encourage state, local, and not-for-profit delivery partners to improve performance in three complementary ways: scale, validate, and develop. Scale-up grants promote adoption of effective practices identified through objective searches of the evidence and experience. Validation grants support replication demonstrations before scale-up to test if practices effective in one location or situation can be replicated in others. Smaller grants support development and testing of

new high-potential practices. In addition, the President's Budget proposes Pay for Success pilots.

### Looking Forward

Over the next year, the Administration will continue to build upon these efforts to deliver more value for the taxpayer's dollar. It will continue to strengthen its approach of using goals to communicate priorities, focus agency actions on innovative solutions, support cross-agency collaboration, and enlist external ideas and assistance. The Administration will continue to measure and analyze to find lower cost ways to deliver more mission for the money. It will set ambitious goals to stimulate innovation and motivate effort, and communicate progress and strategies to boost accountability to the public. Increasingly, it will reach out to field employees, other offices, other agencies, and delivery partners to engage them in regular data-driven reviews to find smarter ways to accomplish priority objectives. And, it will strengthen networks, within and beyond government, to tackle common problems and pursue shared areas of opportunity.

### Agency Priority Goals

Major Federal agencies have set near-term Agency Priority Goals for 2012-2013, which are a subset of agencies' broader goals and objectives. Over half of the agency goals, such as Interior's goal to permit renewable energy on Interior land, continue Agency Priority Goals set with the 2011 Budget, but update the targets. Other goals address a problem tackled with a 2010-2011 goal, but frame the goals in ways more likely to accelerate progress. For example, an HHS goal expands from tracking the percentage of Recovery Act funded communities that adopt smoke-free policies to a goal to reduce nation-wide cigarette consumption per capita. Still other goals expand into areas previously untouched by previous Agency Priority Goals, such as the Commerce Department's weather-forecasting goal.

The full list of Agency Priority Goals can be found at [www.Goals.Performance.gov](http://www.Goals.Performance.gov) and are sortable by agency and by theme. Agency Priority Goals are presented this year in the context of agency strategic goals and objectives to show how Agency Priority Goals fit within the context of agencies' longer term strategic goals, and each agency's full set of performance objectives. In addition, to make the goals more understandable to the public, each goal includes an "Impact Statement" that describes generally what the goal is trying to accomplish, paired with a time-specific target to guide agency action.

### Cross-Agency Priority Goals

In addition, the Administration has adopted interim Cross-Agency Priority (CAP) Goals. This Administration, Congress, the U.S. Government Accountability Office (GAO), and others have long recognized that government often tackles problems in stove-piped or fragmented ways that can prevent problems from being effectively addressed. To enhance progress in areas needing more cross-government collaboration, the GPRA Modernization Act

requires OMB to establish a limited number of CAP Goals for both crosscutting policy and government-wide management areas. The goals are to be revised or updated at least every four years, starting with the 2015 Budget. At the same time, the law instructs the Administration to set interim CAP goals concurrent with the 2013 Budget.

To develop the interim CAP Goals, OMB and the Performance Improvement Council worked with senior policy officials and agencies, and consulted with Congress. GAO studies were also considered in selecting CAP Goals. Emphasis was placed on choosing goals that reflect Presidential priorities and where increased cross-agency coordination and regular review are expected to speed progress. The limited number of interim CAP Goals therefore reflect a subset of Presidential priorities and opportunities for increased cross-agency collaboration. CAP Goals are complemented by other cross-agency coordination and goal-setting efforts, such as those of the Federal Food Safety Working Group and the Office of National Drug Control Policy (ONDCP). ONDCP has established government-wide goals and measurements to combat the public health and safety consequences of drug use, and coordinates inter-agency efforts to cut drug use among youth by 15 percent, drug-induced deaths and drug-related morbidity by 15 percent, and drugged driving by 10 percent in five years. The National Drug Control Strategy is available at <http://www.whitehouse.gov/ondcp/2011-national-drug-control-strategy>. The Federal Food Safety Working Group issued an update on its progress since its March 2009 formation at [http://www.whitehouse.gov/sites/default/files/fswg\\_report\\_final.pdf](http://www.whitehouse.gov/sites/default/files/fswg_report_final.pdf).

The Administration set interim CAP Goals in the following areas:

- Science, Technology, Engineering, and Math (STEM) Education
- Veterans Career Readiness
- Broadband
- Entrepreneurship and Small Businesses
- Energy Efficiency
- Exports
- Job Training
- Cybersecurity
- Sustainability
- Financial Management
- Human Capital Management
- Information Technology Management
- Procurement and Acquisition Management
- Real Property Management

The interim CAP Goals can be found at [www.Goals.Performance.gov](http://www.Goals.Performance.gov). The website, which comprises the Federal performance plan, is the beginning of a broader transition to providing the public more dynamic, useful, and current performance information. Progress on each Priority Goal will be published through a central website starting in the fall of 2012.

### Frequent Data-Driven Reviews

For each Agency Priority Goal, the agency head or Chief Operating Officer (COO), often the Deputy Secretary, will continue running data-driven performance reviews

on their Priority Goals at least once a quarter. Some COOs also run quarterly performance reviews with their Departmental components - agencies, bureaus, or programs. At the same time, leaders of individual components, such as the heads of the FBI, Customs and Border Patrol, Federal Emergency Management Agency, and the Food and Drug Administration, are running their own frequent data-driven reviews. OMB, with support from the Performance Improvement Council, will initiate progress reviews on CAP Goals later this year.

### ***Producing Results for the American People***

In the coming year, the Administration will continue to develop tools and offer services to strengthen agency performance improvement capacity and to foster inter-agency networks to facilitate expertise and data sharing, co-investment, and learning. It will strengthen a working group begun in 2011 to help agencies improve and benchmark their data-driven progress reviews. The Administration will continue to foster inter-agency networks, such as the Benefits Processing Working Group,

launched in 2010, and will also work to launch additional networks to develop measures for other common government functions, such as reducing the number of undesirable incidents and their associated costs. Additionally, the Administration will develop training opportunities and career pathways to strengthen performance improvement skills and capacity across the Federal government.

The Administration is strongly committed to responding to the President's charge to deliver a government that works, a government that is smarter, leaner, and more effective, one that produces tangible results all around us - in a small business opening its doors, more homes becoming energy-efficient, new wind turbines generating clean renewable energy, healthier children, better served veterans, and falling crime rates. Leadership engagement, clear goals, measurement, analysis of progress, and frequent progress reviews to find and promote what works and fix or eliminate what does not are keys to fulfilling that commitment to improve the lives of the American people.

## 8. PROGRAM EVALUATION AND DATA ANALYTICS

The Administration is committed to using taxpayer dollars efficiently and effectively. Central to that commitment is a culture where agencies constantly ask, and try to answer, questions that help them find, implement, spread, and sustain effective programs and practices; find and fix or eliminate ineffective ones; test promising programs and practices to see if they are effective and can be replicated; and find lower-cost ways to achieve positive impacts. The Federal fiscal situation necessitates doing more with less, not only to reduce budget deficits, but also to build confidence that Americans are receiving maximum value for their hard-earned tax dollars. It is therefore critical to apply an evidence-based approach to government management that utilizes rigorous methods appropriate to the situation, learns from experience, and is open to experimentation. This application requires selecting and implementing promising policies, programs, and strategies, monitoring of their implementation, evaluating their effectiveness, and adapting them over time to meet emerging challenges informed by ongoing measures of the well-being of Americans and the Nation.

One of the challenges to evidence-based policy-making is that it is sometimes hard to say whether a program is working well or not. Historically, evaluations have been an afterthought when programs are designed, and once a program has been in place for a while, building a constituency for rigorous evaluation is hard. Further, the use of data and evaluation on an ongoing basis to manage and improve programs is rare. The Administration is committed to addressing this problem.

This Administration is strongly encouraging appropriately rigorous evaluations and data analytics to determine the impact of programs and practices on outcomes, complementing the performance measurement and management practices described in chapter 7, “Delivering a High-Performance Government”, in this volume. In many policy debates, stakeholders come to the table with deep disagreements about the effectiveness or ineffectiveness of particular interventions. Evaluations that are sufficiently rigorous, relatively straightforward, and free from political interference are especially valuable in such circumstances.

Evaluations do what performance measurement, alone, cannot. Evaluations determine whether programs produce outcomes superior to alternative policy choices, or not putting into place a policy at all. This is in contrast with performance measurement, which tracks implementation and progress toward intended program outcomes, but typically does not compare outcomes to alternative programs or the status quo. If a particular job training approach has a high job placement rate, is it because it is effective or because it attracts those easiest to place in jobs? An evaluation would compare the employment of

participants in the job training program to comparable individuals who did not participate in the program in order to isolate the effects of the training from other factors. Evaluations can answer a wide-range of germane questions such as whether workers are safer in facilities that are inspected more frequently, whether one option for turning around a low-performing school is more effective than another, whether outcomes for families are substantially improved in neighborhoods that receive intensive services, whether no-fee debit cards increase savings among the unbanked, and whether re-employment services are cost-effective.

Evaluation is one component of the evidence infrastructure that plays a role in a wide range of decision-making. The best government programs embrace a culture where broad statistical data series, performance and other measurement, evaluation, and other data analytics are regularly used and complement one another. Agencies use broad statistical data series to understand social and economic conditions of the populations to be served, and to inform the design of new or revised policies. They use performance measurement to monitor the implementation of their policies, to detect promising practices for improving performance and to identify challenges. They use descriptive evidence about program recipients, program stakeholders, and community conditions to target their resources more precisely to areas of high need and opportunity. Regression analyses of administrative data can, for example, shed light on how to better match recipients with appropriate services. Rigorous evaluations using experimental or quasi-experimental methods identify the effects of programs in situations where doing so is difficult using other methods; and rigorous qualitative evidence complements what can be learned from quantitative evidence and provides greater insight into how programs and practices can be implemented more and less successfully.

Developing and supporting the use of data and evaluation in decision-making requires a coordinated effort between those charged with managing the operations of a program and those responsible for using data and evaluation to understand a program’s effectiveness. It requires consistent messages from multiple leaders in an agency to ensure that evidence is valued, collected or built, analyzed, understood, and appropriately acted upon. No one individual in an agency has the knowledge and skills necessary to develop research designs that address actionable questions, understand different types of evidence, interpret evidence, and develop and implement effective, evidence-based practices. Rather, it takes a leadership team, at the agency level, to oversee these efforts and to build and sustain a culture of learning. Complementing this team with a team of “implementers” at the program

level encourages the use of evidence and data so that it will filter down into program management.

Who is on these teams and how their work is divided depends upon the specific needs, personnel, and structure of a given agency. Success of these teams depends on including leadership at the agency and bureau level capable of supporting and requiring programs' use of data and evaluation in program operations. This leadership team, working together with OMB and Congress, can make sure that the right questions are being asked about the program's effectiveness and its operations. Program managers are responsible for creating a culture where all operational decisions and internal and external communications of progress are based on evidence and data. In order to do so, the program managers need a team of both data analysts and evaluators. These individuals can provide the data and analysis packaged in a way that helps inform the program's operational and policy decisions, including understanding the different types of evidence available and its implications for decisions, as well as identifying the need for new descriptive data and evaluation studies.

The Administration and Congress have made considerable progress in making Federal decision-making more based in data and evidence. Chapter 7, "Delivering a High-Performance Government", in this volume discusses how Administration efforts are helping focus agencies on setting high-priority goals and measuring their progress on those goals.

In the area of evaluation, the Administration has moved to adopt a multi-tiered approach to evidence-based funding for new grant-based initiatives targeted towards education interventions, teenage pregnancy prevention, social innovations, home visitations for new parents, workforce interventions, and science, technology, engineering, and math programs. The initiatives offer the most funding to programs and practices supported by the strongest evidence. Programs with some, but not as much, supportive evidence also receive significant funding, the condition that the programs will be rigorously evaluated going forward. Over time, the Administration anticipates that some second-tier programs will move to the first tier as they prove more promising and cost-effective than other programs. Finally, agencies are encouraged to innovate and test ideas with strong potential—ideas supported by preliminary research findings or reasonable hypotheses. At all levels, it is important to build implementation evidence into this multi-tiered approach so that we understand how best to scale successful programs and to create more and better program options.

A good example of this approach—in which new or expanded programs have evaluation "baked into their DNA"—is the Department of Education's Invest in Innovation Fund (i3). The i3 fund invests in high-impact, potentially transformative education interventions—ranging from new ideas with huge potential to those that have proven their effectiveness and are ready to be scaled up. Whether applicants to i3 are eligible for funding to develop, validate, or scale up their program, and therefore how much funding they are eligible to receive, depends

on the strength of the existing evidence of the program's effectiveness, the magnitude of the impact the evidence demonstrates the program is likely to have, and the program's readiness for scaling up.

This multi-tiered structure provides objective criteria to inform decisions about programs and practices in which to invest and create the right incentives for the future. Organizations understand that to be considered for significant funding, they must provide credible evaluation results that show promise, and, before that evidence is available, be ready to subject their models to analysis. As more models move into the top tier, this approach creates pressure on all the top-tier models to compete to improve their effectiveness to continue to receive support. The Administration is also working with agencies to adopt common evidence standards (where such common standards are appropriate) and to develop more robust "what works" repositories across a wide range of programs.

The Administration has also championed the Pay for Success model. In the Pay for Success model, philanthropic and other private investors provide up-front funding for services for a target population to achieve specific outcomes that are measured in terms of improved lives and reduced costs. The government pays only if agreed-upon goals are achieved. Pay for Success allows the government to better partner with and leverage the resources of philanthropic and other investors to help drive evidence-based innovation and invest in what works.

The Pay for Success model is particularly well-suited to cost-effective interventions that produce government savings, since those savings can be used to pay for results. For example, effective prisoner re-entry interventions can reduce future prison costs, and a portion of those savings can be used to pay back the investors. More effective workforce systems could increase job placement and improve job retention and again, some savings may be used to repay the investments. The Administration is promoting the Pay for Success model in several Federal grant programs and is helping several states and localities that are seeking to implement the Pay for Success model. In addition, the Administration is exploring ways in which appropriations bills can better account for programs that generate savings for other programs.

The Administration supports evaluations with rigorous research designs that address questions critical to program design, and supports strengthened agency capacity to support such evaluations, even in tight budget times. The Recovery Act launched a number of evaluations across the Federal Government on such topics as the effects of different rent formulas on housing assistance recipients, the effects of smart grid meters on residential electricity usage, and the effects of extended unemployment insurance benefit programs on employment outcomes. Even with scarce dollars, agencies continue to direct scarce dollars to evaluations to assure they are not funding programs without positive impacts, the biggest waste of all.

Research and evaluation are part of any comprehensive effort to use data and evidence to serve the American people in more cost-effective ways. So ideally the fund-

ing for research and evaluation would not be viewed as optional but rather as an essential element of running effective government programs. New funding for research and evaluation is only part of the Administration's efforts to re-invigorate evaluation activities across the Federal Government. The Administration is also working to build agency capacity for a robust evaluation and data analytics infrastructure, whether that is supporting an agency in standing up a central evaluation office, empowering existing evaluation offices, institutionalizing policies that lead to strong evaluations, helping spread effective procurement practices, or hiring evaluation and data analytics experts into key administrative positions.

Part of that evaluation and data analytics infrastructure is helping agencies make better use of administrative data. Administrative data, especially when linked across programs or to survey data, can sometimes make rigorous program evaluations much more informative and much less costly. Data from an early childhood program linked to the data from juvenile justice systems or K-16 educational systems shed light on the long-term effects of interventions in ways that would be cost-prohibitive in a long-term survey follow-up. Linking records from across programs also enables policy makers to better understand how families access combinations of government assistance programs, such as food assistance and unemployment insurance, during times of economic challenges. This sort of analysis is not evaluation, but is an incredibly important aspect of agency management – looking at available information to find patterns, relationships, anomalies, and other features to inform priority-setting, program design, and hypothesis formulation.

Moreover, when skilled data analysts have access to linked administrative data with appropriate privacy protections, the cost of additional policy-relevant research is extremely modest. The private sector is increasingly using such data analytics to drive decisions on how to allocate resources and better serve their customers. There is perhaps even greater potential in the public sector to make use of such analytics, although realizing this potential will also take a concerted effort to hire and retain skilled data analysts, increased attention to the multiple legal and policy contexts that make data access a continued challenge, and infrastructure investments that support this sort of analysis by more people across the organization.

In addition, an inter-agency working group is beginning to share best practices across the Federal Government and to discuss issues, such as how to do a better job disseminating evidence of what works, integrating cost-effectiveness analysis into evaluations, and making better use of administrative data for evaluation and other data analytics purposes. OMB is also building tools that should make it easier for agencies to make information available online about their completed and underway evaluations.

Rigorous evaluation will be a central component of several cross-agency initiatives designed to identify more cost-effective approaches to achieving positive outcomes for disadvantaged populations. These populations are often eligible for multiple services and benefits administered

by separate Federal and State agencies, which are poorly coordinated and governed by rules that stifle effective collaboration and innovation. In 2012, the Departments of Labor and Education will support joint pilots to test interventions and systemic reforms with the potential to improve education and employment outcomes at lower cost to taxpayers. The Departments of Education, Labor, and Health and Human Services and the Social Security Administration will launch a joint initiative to test interventions that improve outcomes for children with disabilities and their families, which may yield substantial savings through reduced long-term reliance on the Supplemental Security Income program and other public services. OMB's Partnership Fund for Program Integrity Innovation is testing promising solutions developed collaboratively by Federal agencies, States, and other stakeholders to improve payment accuracy, improve administrative efficiency, and enhance service delivery in benefit programs that serve overlapping populations. Evaluation of these pilots will help determine which strategies lead to better results at lower cost, allowing Federal and State governments to identify the most promising strategies that warrant expansion.

The Administration is committed to producing more and better empirical evidence. There is, however, perhaps an even greater need to promote greater demand for data and evidence in Federal decision-making processes. The process of setting high-priority goals and measuring progress towards meeting them is beginning to increase the demand for data, its analysis, and complementary evaluations, as leaders running frequent data-driven reviews to achieve progress on ambitious goals search for increasingly effective and cost-effective practices to speed progress toward the goals they have set.

State, local, and tribal governments face a similar need to prioritize programs that achieve the best results. One particularly interesting model is the Washington State Institute for Public Policy. The Institute provides a good example of how a centralized evaluation and research agency can conduct reviews of existing evaluation research to identify policies, practices, and strategies that are most likely to give taxpayers a return on their investment. It was created by the Washington state legislature to carry out practical, non-partisan research – at legislative direction – of importance to Washington State. The Institute has its own set of policy analysts and economists, specialists from universities, and consultants whom it engages to conduct policy analysis. It does a systematic review of evidence and has a methodology for comparing the relative return-on-investment of alternative interventions and presents the results in a straightforward, user-friendly manner. The Institute provides a potential model for Federal, state, local, and tribal government as well as for not-for-profit and for-profit organizations. An example of an assessment of the evidence for options to improve statewide outcomes in a variety of areas, including child maltreatment, crime, and education can be found at the Institute's website here: <http://www.wsipp.wa.gov/rpt-files/11-07-1201.pdf>.

The President has made it clear that policy decisions should be driven by evidence—evidence about what works and what does not and evidence that identifies the greatest needs and challenges. By instilling a culture of learning into Federal programs, the Administration will

build knowledge so that spending decisions are based not only on good intentions, but also on strong evidence that yield the highest social returns on carefully targeted investments.

## 9. BENEFIT-COST ANALYSIS

### I. INTRODUCTION

Federal Government policies and programs make use of our Nation's limited resources to achieve important social goals, including economic growth, job creation, education, national security, environmental protection, and public health. Many Federal programs require governmental expenditures, such as those funding early childhood education or job training. Moreover, many policies entail social expenditures that are not reflected in budget numbers. For example, environmental, energy efficiency, and workplace safety regulations impose compliance costs on the private sector. In all cases, the American people expect the Federal Government to design programs and policies to manage and allocate scarce fiscal resources prudently, and to ensure that programs achieve the maximum benefit to society and do not impose unjustified or excessive costs.

A crucial tool used by the Federal Government to achieve these objectives is benefit-cost analysis, which provides a systematic accounting of the social benefits and costs of Government policies. Executive Order 13563, issued in January 2011, makes a firm commitment to cost-benefit analysis and to ensuring that the benefits of regulations justify the costs. It states, among other things, that each agency must "use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible." It also states that agencies must "propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify.)"

The goal of benefit-cost analysis is to promote social welfare -- to ensure that the consequences of regulations are desirable on balance. The use of monetary equivalents does of course create numerous challenges, both conceptual and empirical; philosophers and economists have grappled with those challenges.<sup>1</sup> The translation of regulatory

<sup>1</sup> See Adler (2011). [Reference is to Matthew D. Adler, *Well-Being and Fair Distribution: Beyond Cost-Benefit Analysis*, Oxford University

consequences into monetary figures is meant to promote sensible comparisons, and should be understood as an administrable method for promoting that assessment. Other considerations, not subject to that translation, may also matter. As Executive Order 13563 also states, "each agency may consider (and discuss qualitatively) values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts."

The assessment of benefits and costs of a government policy are meant to offer a concrete description of the anticipated consequences of the policy. Such an accounting helps policymakers to design programs to be both efficient and effective and to avoid unnecessary or unjustified costs and burdens. That accounting also allows the American people to see the expected consequences of programs and to hold policymakers accountable for their actions.

As noted, quantification and monetization produce significant challenges, but serious efforts have been made to meet those challenges. Those efforts are continuing. Importantly, there is a close relationship between open government and benefit-cost analysis. Because analysis is often improved through transparency and public comments, transparency and consideration of benefits and costs are tightly connected in practice. Especially in a difficult economic period, it is important to analyze both benefits and costs and to take steps to eliminate unnecessary burdens, which may have adverse effects on job creation and growth. Executive Order 13563 calls for such steps with its efforts to discipline the flow of new regulations and its requirement of retrospective analysis of existing significant rules. Retrospective analysis has recently become a central part of the regulatory process as agencies identify outdated or redundant regulations and is helping to eliminate billions of dollars in regulatory burdens, in areas including environmental protection, transportation, labor, health care, and agriculture.

Press, 2011)]

### II. BENEFIT-COST ANALYSIS OF FEDERAL REGULATIONS

#### Overview of Benefit-Cost Analysis of Federal Regulation

For over three decades, benefit-cost analysis has played a critical role in the evaluation and design of significant Federal regulatory actions. While there are precursors in earlier administrations, the Reagan Administration was the first to establish a broad commitment to benefit-cost analysis in regulatory decision making through its Executive Order 12291. The Clinton Administration continued that commitment when it updated the principles

and processes governing regulatory review in Executive Order 12866, which continues in effect today. Executive Order 12866 requires executive agencies to catalogue and assess the benefits and costs of planned significant regulatory actions. It also requires agencies (1) to undertake regulatory action only on the basis of a "reasoned determination" that the benefits justify the costs and (2) to choose the regulatory approach that maximizes net social benefits, that is, benefits minus costs (unless the law governing the agency's action requires another approach). Executive Order 13563, issued in January 2011, reaffirms

the requirements of Executive Order 12866 and imposes a set of important additional requirements designed to promote sound analysis, to increase flexibility, to promote public participation, to harmonize conflicting and redundant requirements, and to ensure scientific integrity.

Operating under the broad framework established by Executive Orders 13563 and 12866, the Office of Management and Budget requires careful analysis of the costs and benefits of significant rules; identification of the approach that maximizes net benefits; detailed exploration of reasonable alternatives, alongside assessments of their costs and benefits; cost-effectiveness; and attention to unquantifiable benefits and costs as well as to distributive impacts. Central goals are to ensure that regulations will be effective in achieving their purposes and that they do not impose excessive costs. As noted, it is especially important to maximize net benefits, and to avoid unjustified burdens, in a period of economic difficulty. Notably, Executive Order 13563 specifically refers to “job creation,” and where feasible, agencies have recently devoted a great deal of attention to the anticipated job impacts (whether positive or negative) of regulations.

Under Executive Order 13563, agencies are authorized to consider “values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts.” In analyzing the effects of rules issued under the Americans with Disabilities Act, for example, it is legitimate to consider the dignitary values<sup>2</sup> associated with protection against discrimination, and also the equitable goals of the statute. Also, in eliminating the ban on entry into the United States of those who are HIV-positive, it is legitimate to consider dignitary and equitable factors that properly bear on the decision to eliminate that ban.

Reviewing agencies’ benefit-cost analyses and working with agencies to improve them, OMB provides a centralized repository of analytical expertise in its Office of Information and Regulatory Affairs (OIRA). OMB’s guidance to agencies on how to do benefit-cost analysis for proposed regulations is contained in its Circular A-4. A-4 directs agencies to specify the goal of a planned regulatory intervention, to consider a range of regulatory approaches for achieving that goal, to select the least burdensome approach, and to estimate the benefits and costs of each alternative considered. To the extent feasible, agencies are re-

quired to monetize benefits and costs, so that they are expressed in comparable units of value. This process enables the agency to identify (and generally to choose) the approach that maximizes the total net benefits to society generated by the rule. OIRA has recently issued a primer on Circular A-4 and also a response to Frequently Asked Questions.

For example, consider a regulation that sets standards for how quickly a truck’s brakes must be able to bring it to a stop.<sup>3</sup> A shorter stopping distance generates greater safety benefits, but also will impose larger compliance costs (if more effective brakes are more expensive). The agency should attempt to quantify both the safety benefits of reduced stopping distance and the costs of regulatory requirements. It should consider a range of stopping distances to determine the optimal one that maximizes net benefits. At such an optimal standard, making the stopping distance even shorter would impose compliance costs greater than additional safety benefits. At the same time, making the stopping distance longer than optimal results in a loss in safety benefits that is greater than the cost savings. Careful benefit-cost analysis enables the agency to determine the optimal standard. It helps to show that some approaches would be insufficient and that others would be excessive.

To be sure, quantification of the relevant variables, and monetization of those variables, can present serious challenges. OIRA and relevant agencies have developed a range of strategies for meeting those challenges; many of them are sketched in Circular A-4, and we take up one such approach below. Efforts continue to be made to improve current analyses and to disclose and test their underlying assumptions. In some cases, identification of costs and benefits will leave significant uncertainties. In some cases, the monetized figures will not be sufficient to settle the appropriate choice. But much of the time, an understanding of costs and benefits will rule out some possible courses of action, and will show where, and why, reasonable people might differ. Such an understanding will also help to identify the most effective courses of action and to eliminate unjustified costs and burdens—in the process potentially helping to promote competitiveness, innovation, job creation, and economic growth. (Recall that the purpose of cost-benefit analysis is to provide an administrable method for assessing the consequences of regulation.)

<sup>2</sup> Dignitary value is defined as “a concern for values inherent in or intrinsic to our common humanity—values such as autonomy, self-respect, or equality that might be nurtured or suppressed depending on the form that governmental decision making takes.” The definition is available at <http://digitalcommons.law.yale.edu/>.

<sup>3</sup> The National Highway Traffic Safety Administration issued a new safety standard for air brake systems to improve the stopping distance performance of trucks. See 49 CFR § 571.

**Table 9–1. ESTIMATES OF THE TOTAL ANNUAL BENEFITS AND COSTS OF MAJOR RULES REVIEWED BY OMB IN 2010**  
(In billions of 2001 dollars)

Rule	Agency	Benefits	Costs
Energy Conservation Standards for Small Electric Motors .....	DOE	0.7-0.8	0.2
Energy Efficiency Standards for Commercial Clothes Washers .....	DOE	0-0.1	<0.1
Energy Efficiency Standards for Pool Heaters and Direct Heating Equipment and Water Heaters .....	DOE	1.3-1.8	1.0-1.1
Medical Examination of Aliens--Removal of Human Immunodeficiency Virus (HIV) Infection from Definition of Communicable Disease of Public Health Significance ...	HHS	Not Estimated	<0.1
Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents .....	HHS	Not Estimated	Not Estimated
Use of Ozone-Depleting Substances; Removal of Essential Use Designations [Flunisolide, Triamcinolone, Metaproterenol, Pirbuterol, Albuterol and Ipratropium in Combination, Cromolyn, and Nedocromil] .....	HHS	Not Estimated	Not Estimated
Interim Final Rules under the Paul Wellstone and Pete Domenici Mental Health Parity and Addiction Equity Act of 2008 .....	HHS/DOL/TREAS	Not Estimated	<0.1
Interim Final Rules for Group Health Plans and Health Insurance Issuers Relating to Dependent Coverage of Children to Age 26 under the Patient Protection and Affordable Care Act .....	HHS/DOL/TREAS	Not Estimated	<0.1
Interim Final Rules for Group Health Plans and Health Insurance Coverage Relating to Status as a Grandfathered Health Plan under the Patient Protection and Affordable Care Act .....	HHS/DOL/TREAS	Not Estimated	<0.1
Patient Protection and Affordable Care Act: Preexisting Condition Exclusions, Lifetime and Annual Limits, Rescissions, and Patient Protections .....	HHS/DOL/TREAS	Not Estimated	<0.1
Interim Final Rules for Group Health Plans and Health Insurance Issuers Relating to Internal Claims and Appeals and External Review Processes under the Patient Protection and Affordable Care Act .....	HHS/DOL/TREAS	Not Estimated	<0.1
Interim Final Rules for Group Health Plans and Health Insurance Issuers Relating to Coverage of Preventive Services under the Patient Protection and Affordable Care Act .....	HHS/DOL/TREAS	Not Estimated	Not Estimated
Migratory Bird Hunting; Final Frameworks for Early-Season Migratory Bird Hunting Regulations .....	DOI	0.2-0.3	Not estimated
Migratory Bird Hunting; Final Frameworks for Late Season Migratory Bird Hunting Regulations .....	DOI	0.2-0.3	Not estimated
Nondiscrimination on the Basis of Disability in Public Accommodations and Commercial Facilities .....	DOJ	1.0-2.1	0.5-0.7
Nondiscrimination on the Basis of Disability in State and Local Government Services .....	DOJ	0.2-0.3	0.1-0.2
Electronic Prescriptions for Controlled Substances .....	DOJ	0.3-1.3	<0.1
Cranes and Derricks in Construction .....	DOL	0.2	0.1
Improved Fee Disclosure for Pension Plans .....	DOL	Not Estimated	<0.1
Automatic Dependent Surveillance--Broadcast (ADS-B) Equipage Mandate to Support Air Traffic Control Service .....	DOT	0.1-0.2	0.2
Electronic On-Board Recorders for Hours-of-Service Compliance .....	DOT	0.2	0.1
Positive Train Control .....	DOT	<0.1	0.5-1.3
Pipeline Safety: Distribution Integrity Management .....	DOT	0.1	0.1
Passenger Car and Light Truck Corporate Average Fuel Economy Standards MYs 2012 to 2016 .....	DOT and EPA	3.9-18.2	1.7-4.7
S.A.F.E. Mortgage Licensing Act .....	TREAS	Not Estimated	0.1-0.2
Control of Emissions from New Marine Compression-Ignition Engines at or above 30 Liters per Cylinder .....	EPA	Not Estimated	Not Estimated
National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines .....	EPA	0.7-1.9	0.3
National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines--Existing Stationary Spark Ignition (Gas-Fired) .....	EPA	0.4-1.0	0.2
NESHAP: Portland Cement Notice of Reconsideration .....	EPA	6.1-16.3	0.8-0.9
Prevention of Significant Deterioration/Title V Greenhouse Gas Tailoring Rule .....	EPA	Not Estimated	Not Estimated
Renewable Fuels Standard Program .....	EPA	Not Estimated	Not Estimated
Review of the National Ambient Air Quality Standards for Sulphur Dioxide .....	EPA	2.8-38.6	0.3-2.0
Lead; Amendment to the Opt-out and Recordkeeping Provisions in the Renovation, Repair, and Painting Program .....	EPA	0.8-3.0	0.3
Revisions to the Spill Prevention, Control, and Countermeasure (SPCC) Rule .....	EPA	0	-0.1

## The Benefits and Costs of Federal Regulation in FY 2010

Each year, OMB reports to Congress agencies' estimates of the benefits and costs of major regulations reviewed in the prior fiscal year. Table 9–1 presents the benefit and cost estimates for the 34 non-budgetary rules reviewed by OMB in FY 2010.<sup>4</sup> Of those, agencies monetized both the benefits and costs for 18.<sup>5</sup>

Most of the benefits and costs reported in Table 9–1 are expressed as ranges, and sometimes as wide ranges, because of uncertainty about the likely consequences of rules. Quantification and monetization raise difficult conceptual and empirical questions. Prospective benefit-cost analysis requires predictions about the future—both about what will happen if the regulatory action is taken and what will happen if it is not—and what the future holds is typically not known for certain. A standard goal of the agency's analysis is to produce both a central "best estimate," which reflects the expected value of the benefits and costs of the rule, as well as a description of the ranges of plausible values for benefits, costs, and net benefits. These estimates inform the decisionmakers and the public of the degree of uncertainty associated with the regulatory decision. The process of public scrutiny can sometimes reduce that uncertainty.

To illustrate some of the underlying issues, consider the EPA's recent National Ambient Air Quality Standard (NAAQS) for Sulfur Dioxide. The benefits of the rule are estimated to be somewhere between \$2.8 to \$38.6 billion—an expansive range. Almost all of these estimated benefits are due to co-benefits of reduced mortality resulting from the reduction in particulate matter emissions caused by the rule. However, there is substantial uncertainty with respect to (a) the relationship between exposure to particulate matter and premature death and (b) the proper monetary valuation of avoiding a premature death. Hence, the agency reported a wide range of plausible values for the benefits of the NAAQS for Sulfur Dioxide. Similar uncertainties in both the science used to predict the consequences of rules and the monetary values of those consequences, contribute to the uncertainty represented in the ranges of benefits and costs for other rules in Table 9–1. Despite these uncertainties, benefit-cost analysis often reduces the range of reasonable approaches – and simultaneously helps to inform the decision about which approach is most reasonable.

<sup>4</sup> FY 201020 is the most recent period for which such a summary is available. These estimates were reported in OMB, 2011 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities. A detailed description of the assumptions and calculations underlying these estimates is provided in that Report.

<sup>5</sup> (1) The Department of Health and Human Services issued six rules to implement health insurance reforms. (2) The Department of Interior adopted two Migratory Bird Hunting regulations where the agency assessed benefits associated with increased consumer welfare of hunting allowances. (3) The Environmental Protection Agency assessed the benefits and costs for both national and international coordinated strategy to control emissions from ocean-going vessels, adopted a case-study approach to examine the effects of the Renewable Fuels Program, and provided illustrative estimates for the Greenhouse Gas Tailoring Rule.

## Quantification and Breakeven Analysis

In some cases, the effort to monetize certain benefits (such as protection of streams and wildlife) will run into serious obstacles; quantification may be possible but not monetization. In other cases, analysts will know the direction of an effect, and perhaps be able to specify a range, but precise quantification itself will not be possible. Recognizing these points, OMB has recommended that consistent with Executive Orders 13563 and 12866, the best practice is to accompany all significant regulations with (1) a tabular presentation, placed prominently and offering a clear statement of qualitative and quantitative benefits and costs of the proposed or planned action, together with (2) a presentation of uncertainties and (3) similar information for reasonable alternatives to the proposed or planned action. An advantage of this approach is transparency. If, for example, it is possible to quantify certain benefits (such as protection of water quality) but not to monetize them, then the public should be made aware of that fact. At the same time, qualitative discussion of nonquantifiable benefits should help the public, and relevant decisionmakers, to understand the goal of the regulation and how it might achieve that goal.

When quantification is not possible, many agencies have found it both useful and informative to engage in "breakeven analysis." Under this approach, agencies specify how high the unquantified or unmonetized benefits would have to be in order for the benefits to justify the costs. Suppose, for example, that regulation that protects water quality costs \$105 million annually, and that it also has significant effects in reducing pollution in rivers and streams. It is clear that the regulation would be justified if and only if those effects could reasonably be valued at \$105 million or more. Once the nature and extent of the water quality benefits are understood, it might well be easy to see whether or not the benefits plausibly justify the costs -- and if the question is difficult, at least it would be clear why it is difficult. Breakeven analysis is an important tool, and it has analytical value when quantification is speculative or impossible.

### Current Agency Practice for Values of Mortality Reduction

Since agencies often design health and safety regulation to reduce risks to life, evaluation of these benefits can be the key part of the analysis. When monetizing reduced mortality risks, agencies often use what is commonly described as a "Value of a Statistical Life," or VSL. The term is misleading because it suggests, erroneously, that the goal of monetization is to place a "value" on individual lives. The goal is instead to value reductions in small risks of premature death (such as 1 in 100,000); it follows that "VSL" actually refers to the value of gaining small risk reductions. There is no effort to suggest that any individual's life can be expressed in monetary terms.

Circular A-4 provides background on the theory and practice of calculating VSL. It states that a substantial majority of the studies of VSL indicate a value that varies "from roughly \$1 million to \$10 million per statisti-

cal life.” In practice, agencies have tended to use a value in the middle or upper range of this distribution. (Note that Circular A-4 was issued in 2003 and that because of income growth, the figure increases over time.) OMB believes that it is important to consult the relevant literature, which contains a range of significant empirical findings and conceptual claims, in order to base analysis on the best available research. Below we provide a brief summary of the VSL values agencies have adopted in recent Regulatory Impact Analyses (RIAs).

Two agencies, EPA and DOT, have developed official guidance on VSL. In its 2011 update to its guidelines, DOT uses a value of \$6.2 million (\$2011), and requires all the components of the Department to use this value in their RIAs. EPA recently changed its VSL to \$6.3 million (\$2000) and adjusts this value for real income growth to later years. For example, in its final rule setting a new primary standard for Sulfur Dioxide, EPA adjusted VSL to account for a different currency year (\$2006) and to account for income growth to 2020, which yields a VSL of \$8.9 million. EPA stated in this RIA, however, that it is continuing their efforts to update this guidance.

OMB believes in the importance of consulting the growing empirical and conceptual work in this domain.

**Cost-per-life-saved of Health and Safety Regulation**

For regulations intended to reduce mortality risks, another analytic tool that can be used to assess regulations, and to help avoid unjustified burdens, is cost-effectiveness analysis. Some agencies develop estimates of the “net cost per life saved” for regulations intended to improve public health and safety. To calculate this figure, the costs of the rule minus any monetized benefits other than mortality reduction are placed in the numerator, and the expected reduction in mortality in terms of total number of lives saved is placed in the denominator. This measure avoids any assignment of monetary values to reductions in mortality risk. It still reflects, however, a concern for economic efficiency, insofar as choosing a regulatory option that reduces a given amount of mortality risk at a lower net cost to society would conserve scarce resources compared to choosing another regulatory option that would reduce the same amount of risk at greater net costs.

**Table 9–2. ESTIMATES OF THE NET COSTS PER LIFE SAVED OF SELECTED HEALTH AND SAFETY RULES RECENTLY REVIEWED BY OMB**

(In millions of 2001 dollars)

Rule	Agency	Net Cost per Life Saved	Notes
Prevention of Salmonella Enteritidis in Shell Eggs .....	HHS/FDA	Negative	Morbidity benefits exceed costs.
New Entrant Safety Assurance Process .....	DOT/FMCSA	Negative	Property damage and morbidity benefits exceed costs.
Reduced Stopping Distance Requirements for Truck Tractors .....	DOT/NHTSA	Negative	Property damage benefits exceed costs. The agency estimates that the rule will prevent 135 fatalities and 1,065 nonfatal injuries annually. These figures translate into 156 equivalent fatalities. The main estimates value equivalent fatalities prevented at \$6.1 million. It follows that the value of nonfatal injuries prevented is \$6.1 million*(156-135)=\$128.1 million annually. Total costs associated with the rule range from \$875 million to \$1,400 million annually. If we subtract the injury benefits from costs, the range of net cost per life saved is thus \$5.5 million to \$9.4 million (2007 dollar). Adjusting to \$2001 yields \$6.4 million to \$11.0 million.
Roof Crush Resistance .....	DOT/NHTSA	\$6.4-11.0	

Although the Department of Homeland Security has no official policy on VSL, it recently sponsored a report through its U.S. Customs and Border Protection, and has used the recommendations of this report to inform VSL values for several recent rulemakings. This report recommends \$6.3 million (\$2008) and also recommends that DHS adjust this value upward over time for real income growth (in a manner similar to EPA’s adjustment approach). Other regulatory agencies that have used a VSL in individual rulemakings include DOL’s Occupational Safety and Health Administration (OSHA) and HHS’ Food and Drug Administration (FDA). In a rulemaking revising worker safety standards when using cranes and derricks in construction, OSHA updated the previously used VSL of \$7.0 million (\$2003) to \$8.7 million (\$2010). The FDA is using a value of \$7.9 million (\$2010), but also often uses a monetary value of the remaining life years saved by alternative policies. This is sometimes referred to as a “Value of a Statistical Life Year” or VSLY. As noted,

Table 9–2 presents the net cost per life saved for four recent health and safety rules for which calculation is possible. The net cost per life saved is calculated using 3 percent discount rate and using agencies’ best estimates for costs and expected mortality reduction where those were provided by the agency. There is substantial variation in the net cost per life saved by these rules, ranging from negative (that is, the non-mortality-related benefits outweigh the costs), to potentially as high as \$11.0 million.

This table is designed to be illustrative rather than definitive, and continuing work must be done to ensure that estimates of this kind are complete and not misleading. For example, some mortality-reducing rules have a range of other benefits, including reductions in morbidity, and it is important to include these benefits in cost-effectiveness analysis. Other rules have benefits that are exceedingly difficult to quantify but nonetheless essential to consider; consider rules that improve water quality or have aes-

thetic benefits. Nonetheless, it is clear that some rules are far more cost-effective than others, and it is valuable to take steps to catalogue variations and to increase the

likelihood that scarce resources will be used as effectively as possible.

### III. BENEFIT-COST ANALYSIS OF BUDGETARY PROGRAMS

As noted, Executive Orders 13563 and 12866 require agencies, to the extent permitted by law, to “propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.” OIRA works actively with agencies to promote compliance with this requirement.

Historically, benefit-cost analysis of Federal budgetary programs has been more limited than that of regulatory policy. Increasingly, though, the Federal Government explicitly employs benefit-cost analysis to ensure that projects and spending programs have benefits in excess of costs, maximize net benefits, and allocate federal dollars most efficiently across potential projects.

In the 1936 Flood Control Act, for example, Congress stated as a matter of policy that the Federal government should undertake or participate in flood control projects if the benefits exceeded the costs, where the lives and social security of people are at stake. By the late 1970s, the Army Corps of Engineers had begun to use benefit-cost analysis to improve the return on investment at a given project site. The Corps did this by designing projects based on increments of work whose benefits exceeded their costs. More recently, the Budget has used benefits and costs, along with other criteria, to develop an overall program for the Corps that yields the greatest net benefits or cost effectiveness.

Benefit-cost analysis can also be used to evaluate programs retrospectively to determine whether they should be either expanded or discontinued and how they can be improved. Chapter 8, “Program Evaluation”, in this volume discusses current efforts to improve program evaluation. Evidence that an activity can yield substantial net benefits has motivated the creation and expansion of a substantial number of programs. For example, longitudinal studies have shown that each dollar spent on high quality pre-school programs serving disadvantaged children yields substantially more than a dollar (in present value) in higher wages, less crime, and less use of public services, motivating an expansion of funding for quality

pre-K programs. Similar evidence has spurred the decision to expand funding for nurse-family partnerships, finding that each dollar spent in the program leads to more than a dollar of benefits mostly in reduced government expenditures on health care, educational and social services, and criminal justice, and that the highest returns were present in serving the most disadvantaged families. Similarly, GAO has concluded that the Women, Infants, and Children (WIC) program produces monetary benefits that exceed its costs by reducing the incidence of low birth weight and iron deficiency, which are linked to children’s behavior and development.

OMB continually works with executive agencies to improve their benefit-cost analyses, and to increase transparency. In its 2011 annual report to Congress on the benefits and costs of Federal regulations,<sup>6</sup> OMB continues to support the recommendations for improvement in agencies’ benefit-cost analysis by promoting (1) clarity with respect to underlying assumptions and anticipated consequences, (2) prominent tabular presentations of costs and benefits, and (3) careful consideration of the comments offered by members of the public on proposed rules. Furthermore, OMB recommends that benefit-cost analysis should be seen and used as a central part of open government. By providing the public with information about proposed and final regulations, by revealing assumptions and subjecting them to public assessment, and by drawing attention to the consequences of alternative approaches, such analysis can promote public understanding, scrutiny, and improvement of rules. OMB continues to explore ways to ensure that benefit-cost analysis helps promote the commitment to open government.

<sup>6</sup> OMB, 2011 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities.

<sup>7</sup> See Transparency and Open Government, Memorandum for the Heads of Executive Departments and Agencies, President Obama, Jan. 21, 2009. For discussion of this point and its relationship to retrospective analysis of the effects of regulations, see Greenstone (2009).

### IV. IMPROVING BENEFIT-COST ANALYSIS

In the Memorandum on Transparency and Open Government, issued on January 21, 2009, the President called for the establishment of “a system of transparency, public participation, and collaboration.”<sup>8</sup> The memorandum elaborated the principles of such a system, designed to promote accountability and disclosure of information that “the public can readily find and use.” The memorandum noted that “[k]nowledge is widely dispersed in society, and public officials benefit from having access to that dispersed knowledge.” Implementing the President’s memorandum, agencies have begun to take a series of

concrete measures described in the Open Government Directive to put into practice the commitments to transparency, participation, and collaboration.<sup>9</sup>

The goals of this effort are to promote accountability, and to ensure that regulations are informed, to the extent possible, by a careful analysis of the likely consequences, and to reduce the dual risks of excessive and insufficient regulation. A particular goal, in the current period, is to avoid unjustified or excessive burdens on business, state and local government, and individuals. The recent agency checklist for Regulatory Impact Analysis is designed to promote these various goals (see Appendix).

<sup>8</sup> Available at: <http://www.gpoaccess.gov/presdocs/2009/DPCPD200900010.pdf>

<sup>9</sup> Available at: <http://www.openthegovernment.org/otg/OGD.pdf>

### **Participation and Collaboration in the Regulatory Process**

Executive Order 13563 states that “regulations shall be based, to the extent feasible and consistent with law, on the open exchange of information and perspectives . . . .” “To promote that open exchange, Executive Order 13563 directs agencies to provide the public with timely access to regulatory analyses and supporting documents on regulations.gov to ensure a meaningful opportunity for public comment.

The Internet provides an ideal vehicle for making information public and, under Executive Order 13563, the Administration has committed to publish as much as possible online in a format that can be retrieved, downloaded, indexed, and searched by commonly-used web search applications. Importantly, this commitment promotes public accessibility of the analysis of benefits and costs, together with the supporting materials, in order to ensure that the analysis is subject to public scrutiny. That process of scrutiny can help to increase benefits, decrease costs, or both.

Agencies now publish a great deal of information relevant to rulemaking and benefit-cost analysis, including underlying data, online and in downloadable, as well as traditional, formats. Executive Order 13563 directs agencies to use regulations.gov to make the online record as complete as possible<sup>10</sup> and to take all necessary steps to make relevant material available to the public for comment.

Executive Order 13563 requires that the public should generally receive a comment period of at least 60 days for proposed regulatory actions. Even where statutes necessitate shorter comment periods, agencies can seek public comment and respond in a timely fashion to suggestions about potential improvements in rules and underlying analyses.

### **Publicly Accessible Summaries and Tables with Key Information**

In order to improve analysis of the effects of regulations, and simultaneously to improve accountability, OMB has called for a clear, salient, publicly accessible executive summary of both benefits and costs—written in a “plain language” manner designed to be understandable to the public. For all economically significant regulations, Executive Orders 13563 and 12866 require agencies to provide a description of the need for the regulatory action and a clear summary of the analysis of costs and benefits, both qualitative and quantitative. The summary often includes an accounting of benefits and costs of alternative approaches, and where relevant, an analysis of distributional impacts on subpopulations (such as disabled people or those with low income).

As noted, some benefits and costs can be quantified and monetized, while some can be described only in qualitative terms. A useful way to communicate effects that cannot be easily quantified or monetized is to present ranges of values (as agencies frequently now do).

### **Simple, Straightforward Justification of Preferred Option**

Executive Orders 13563 and 12866 require the executive summary to include “an explanation of why the planned regulatory action is preferable to the identified potential alternative,” and demonstrate that the agency has selected the approach “that maximizes net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity) unless a statute requires another regulatory approach.”

Under the Executive Orders, agencies are required to provide a “reasoned determination that the benefits of the intended regulation justify its costs,” to the extent permitted by law. In making those determinations, agencies should pay close attention to quantifiable and monetizable benefits and costs, but are permitted to consider values that are hard or impossible to quantify in light of existing knowledge, as well as distributional effects, human dignity, fairness, and considerations of equity (including, where relevant, considerations of environmental justice).

We have noted that where nonquantified or nonmonetized variables are important to the agency’s determination, agencies often use “breakeven analysis,” explaining how high the nonquantified or nonmonetized benefits would have to be in order for the benefits to justify the costs. In those situations, agencies make underlying assumptions transparent to the public and available through the rulemaking process. Where the agency has proceeded even though the benefits do not justify the costs, and where the agency has not selected the approach that maximizes net benefits, it should carefully explain its reasoning (as, for example, where a statute so requires).

Benefit-cost analysis is a useful and often indispensable method for evaluating programs and options. In some cases, it reveals that apparently attractive proposals are too expensive to be worthwhile. In other cases, it shows that costly proposals are well-justified, because the benefits are significantly higher than the costs. Often benefit-cost analysis helps to identify the range of reasonable options. It is true that conceptual and empirical challenges remain and that it is important to assess the evolving literature in order to meet those challenges. Especially in a period of serious economic difficulties, greater use and improvement of benefit-cost analysis are high priorities.

<sup>10</sup> Available at: [http://www.whitehouse.gov/omb/assets/inforeg/edocket\\_final\\_5-28-2010.pdf](http://www.whitehouse.gov/omb/assets/inforeg/edocket_final_5-28-2010.pdf)

## APPENDIX

## AGENCY CHECKLIST: REGULATORY IMPACT ANALYSIS

With this document, the Office of Information and Regulatory Affairs is providing a checklist to assist agencies in producing regulatory impact analyses (RIAs), as required for economically significant rules by Executive Order 12866 and OMB Circular A-4.

Nothing herein alters, adds to, or reformulates existing requirements in any way. Moreover, this checklist is limited to the requirements of Executive Order 12866 (available at: [http://www.reginfo.gov/public/jsp/Utilities/EO\\_12866.pdf](http://www.reginfo.gov/public/jsp/Utilities/EO_12866.pdf)) and Circular A-4 (available at: <http://www.whitehouse.gov/OMB/circulars/a004/a-4.pdf>); it does not address requirements imposed by other authorities, such as the National Environmental Policy Act, the Regulatory Flexibility Act, the Unfunded Mandates Reform Act, the Paperwork Reduction Act, and various Executive Orders that require analysis. Executive Order 12866 and Circular A-4, as well as those other authorities, should be consulted for further information.

## Checklist for Regulatory Impact Analysis:

Does the RIA include a reasonably detailed description of the need for the regulatory action?<sup>11 12</sup>

Does the RIA include an explanation of how the regulatory action will meet that need?<sup>13</sup>

Does the RIA use an appropriate baseline (i.e., best assessment of how the world would look in the absence of the proposed action)?<sup>14</sup>

Is the information in the RIA based on the best reasonably obtainable scientific, technical, and economic information and is it presented in an accurate, clear, complete, and unbiased manner?<sup>15</sup>

<sup>11</sup> Required under Executive Order 12866, Section 6(a)(3)(B)(i): "The text of the draft regulatory action, together with a reasonably detailed description of the need for the regulatory action and an explanation of how the regulatory action will meet

<sup>12</sup> Circular A-4 states: "If the regulation is designed to correct a significant market failure, you should describe the failure both qualitatively and (where feasible) quantitatively." (P. 4)

<sup>13</sup> See note 1 above.

<sup>14</sup> Circular A-4 states: "You need to measure the benefits and costs of a rule against a baseline. This baseline should be the best assessment of the way the world would look absent the proposed action... In some cases, substantial portions of a rule may simply restate statutory requirements that would be self-implementing, even in the absence of the regulatory action. In these cases, you should use a pre-statute baseline." (P. 15-16)

<sup>15</sup> Circular A-4 states: "Because of its influential nature and its special role in the rulemaking process, it is appropriate to set minimum quality standards for regulatory analysis. You should provide documentation that the analysis is based on the best reasonably obtainable scientific, technical, and economic information available... you should assure compliance with the Information Quality Guidelines for your agency and OMB's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies..." (P. 17). The IQ Guidelines (paragraph V.3.a) define objectivity to

Are the data, sources, and methods used in the RIA provided to the public on the Internet so that a qualified person can reproduce the analysis?<sup>16</sup>

To the extent feasible, does the RIA quantify and monetize the anticipated benefits from the regulatory action?<sup>17 18</sup>

To the extent feasible, does the RIA quantify and monetize the anticipated costs?<sup>19</sup>

Does the RIA explain and support a reasoned determination that the benefits of the intended regulation justify its costs (recognizing that some benefits and costs are difficult to quantify)?<sup>20</sup>

include "whether disseminated information is being presented in an accurate, clear, complete, and unbiased manner." <http://www.whitehouse.gov/omb/assets/omb/fedreg/reproducible2.pdf>

<sup>16</sup> Circular A-4 states: "A good analysis should be transparent and your results must be reproducible. You should clearly set out the basic assumptions, methods, and data underlying the analysis and discuss the uncertainties associated with the estimates. A qualified third party reading the analysis should be able to understand the basic elements of your analysis and the way in which you developed your estimates. To provide greater access to your analysis, you should generally post it, with all the supporting documents, on the internet so the public can review the findings." (P. 17). OMB IQ Guidelines (paragraph V.3.b.ii) further states: "If an agency is responsible for disseminating influential scientific, financial, or statistical information, agency guidelines shall include a high degree of transparency about data and methods to facilitate the reproducibility of such information by qualified third parties."

<sup>17</sup> Required under Executive Order 12866, Section 6(a)(3)(C)(i): "An assessment, including the underlying analysis, of benefits anticipated from the regulatory action (such as, but not limited to, the promotion of the efficient functioning of the economy and private markets, the enhancement of health and safety, the protection of the natural environment, and the elimination or reduction of discrimination or bias) together with, to the extent feasible, a quantification of those benefits."

<sup>18</sup> Circular A-4 states: "You should monetize quantitative estimates whenever possible. Use sound and defensible values or procedures to monetize benefits and costs, and ensure that key analytical assumptions are defensible. If monetization is impossible, explain why and present all available quantitative information." (P. 19). Circular A-4 also offers a discussion of appropriate methods for monetizing benefits that might not easily be turned into monetary equivalents.

<sup>19</sup> Required under Executive Order 12866, Section 6(a)(3)(C)(ii): "An assessment, including the underlying analysis, of costs anticipated from the regulatory action (such as, but not limited to, the direct cost both to the government in administering the regulation and to businesses and others in complying with the regulation, and any adverse effects on the efficient functioning of the economy, private markets (including productivity, employment, and competitiveness), health, safety, and the natural environment), together with, to the extent feasible, a quantification of those costs;" See also note 6 above.

<sup>20</sup> Executive Order 12866, Section 1(b)(6) states that to the extent permitted by law, "[e]ach agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs." As Executive Order 12866 recognizes, a statute may require an agency to proceed with a regulation even if the benefits do not justify the costs; in such a case, the agency's analysis may not show any such justification.

Does the RIA assess the potentially effective and reasonably feasible alternatives?<sup>21</sup>

Does the RIA assess the benefits and costs of different regulatory provisions separately if the rule includes a number of distinct provisions?<sup>22</sup>

Does the RIA assess at least one alternative that is less stringent and at least one alternative that is more stringent?<sup>23</sup>

Does the RIA consider setting different requirements for large and small firms?<sup>24</sup>

Does the preferred option have the highest net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires a different approach?<sup>25</sup>

Does the RIA include an explanation of why the planned regulatory action is preferable to the identified potential alternatives?<sup>26</sup>

<sup>21</sup> Required under Executive Order 12866, Section 6(a)(3)(C)(iii): “An assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation, identified by the agencies or the public (including improving the current regulation and reasonably viable nonregulatory actions).”

<sup>22</sup> Circular A-4 states: “You should analyze the benefits and costs of different regulatory provisions separately when a rule includes a number of distinct provisions.” (P. 17)

<sup>23</sup> Circular A-4 states: “you generally should analyze at least three options: the preferred option; a more stringent option that achieves additional benefits (and presumably costs more) beyond those realized by the preferred option; and a less stringent option that costs less (and presumably generates fewer benefits) than the preferred option.” (P. 16)

<sup>24</sup> Circular A-4 states: “You should consider setting different requirements for large and small firms, basing the requirements on estimated differences in the expected costs of compliance or in the expected benefits. The balance of benefits and costs can shift depending on the size of the firms being regulated. Small firms may find it more costly to comply with regulation, especially if there are large fixed costs required for regulatory compliance. On the other hand, it is not efficient to place a heavier burden on one segment of a regulated industry solely because it can better afford the higher cost. This has the potential to load costs on the most productive firms, costs that are disproportionate to the damages they create. You should also remember that a rule with a significant impact on a substantial number of small entities will trigger the requirements set forth in the Regulatory Flexibility Act. (5 U.S.C. 603(c), 604).” (P. 8)

<sup>25</sup> Executive Order 12866, Section 1(a) states: “agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity) unless a statute requires another regulatory approach.”

<sup>26</sup> Required under Executive Order 12866, Section 6(a)(3)(C)(iii): “An assessment, including the underlying analysis, of costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation, identified by the agencies or the public (including improving the current regulation and reasonably viable nonregulatory actions), and an explanation why the planned regulatory action is preferable to the identified potential alternatives.”

Does the RIA use appropriate discount rates for benefits and costs that are expected to occur in the future?<sup>27</sup>

Does the RIA include, if and where relevant, an appropriate uncertainty analysis?<sup>28</sup>

Does the RIA include, if and where relevant, a separate description of distributive impacts and equity?<sup>29</sup>

Does the RIA provide a description/accounting of transfer payments?<sup>30</sup>

<sup>27</sup> Circular A-4 contains a detailed discussion, generally calling for discount rates of 7 percent and 3 percent for both benefits and costs. It states: “Benefits and costs do not always take place in the same time period. When they do not, it is incorrect simply to add all of the expected net benefits or costs without taking account of when they actually occur. If benefits or costs are delayed or otherwise separated in time from each other, the difference in timing should be reflected in your analysis.... For regulatory analysis, you should provide estimates of net benefits using both 3 percent and 7 percent.... If your rule will have important intergenerational benefits or costs you might consider a further sensitivity analysis using a lower but positive discount rate in addition to calculating net benefits using discount rates of 3 and 7 percent.” (PP. 31, 34, 36)

<sup>28</sup> Circular A-4 provides a detailed discussion. Among other things, it states: “Examples of quantitative analysis, broadly defined, would include formal estimates of the probabilities of environmental damage to soil or water, the possible loss of habitat, or risks to endangered species as well as probabilities of harm to human health and safety. There are also uncertainties associated with estimates of economic benefits and costs, such as the cost savings associated with increased energy efficiency. Thus, your analysis should include two fundamental components: a quantitative analysis characterizing the probabilities of the relevant outcomes and an assignment of economic value to the projected outcomes.” (P. 40). Circular A-4 also states: “You should clearly set out the basic assumptions, methods, and data underlying the analysis and discuss the uncertainties associated with the estimates.” (P. 17)

<sup>29</sup> Executive Order 12866, Section 1(b)(5) states; “When an agency determines that a regulation is the best available method of achieving the regulatory objective, it shall design its regulations in the most cost-effective manner to achieve the regulatory objective. In doing so, each agency shall consider incentives for innovation, consistency, predictability, the costs of enforcement and compliance (to the government, regulated entities, and the public), flexibility, distributive impacts, and equity” (emphasis added).

Circular A-4 states: “The term ‘distributional effect’ refers to the impact of a regulatory action across the population and economy, divided up in various ways (e.g., income groups, race, sex, industrial sector, geography)... Your regulatory analysis should provide a separate description of distributional effects (i.e., how both benefits and costs are distributed among sub-populations of particular concern) so that decision makers can properly consider them along with the effects on economic efficiency... Where distributive effects are thought to be important, the effects of various regulatory alternatives should be described quantitatively to the extent possible, including the magnitude, likelihood, and severity of impacts on particular groups.” (P. 14)

<sup>30</sup> Circular A-4 states: “Distinguishing between real costs and transfer payments is an important, but sometimes difficult, problem in cost estimation. . . . Transfer payments are monetary payments from one group to another that do not affect total resources available to society. . . . You should not include transfers in the estimates of the benefits and costs of a regulation. Instead, address them in a separate discussion of the regulation’s distributional effects.” (P. 14)

Does the RIA analyze relevant effects on disadvantaged or vulnerable populations (e.g., disabled or poor)?<sup>31</sup>

Does the analysis include a clear, plain-language executive summary, including an accounting statement that summarizes the benefit and cost estimates for the regulatory action under consideration, including the qualitative and non-monetized benefits and costs?<sup>32</sup>

<sup>31</sup> Circular A-4 states: “Your regulatory analysis should provide a separate description of distributional effects (i.e., how both benefits and costs are distributed among sub-populations of particular concern) so that decision makers can properly consider them along with the effects on economic efficiency. Executive Order 12866 authorizes this approach. Where distributive effects are thought to be important, the effects of various regulatory alternatives should be described quantitatively to the extent possible, including the magnitude, likelihood, and severity of impacts on particular groups.” (P. 14)

<sup>32</sup> Circular A-4 states: “Your analysis should also have an executive summary, including a standardized accounting statement.” (P. 3). OMB recommends that: “Regulatory analysis should be made as transparent as possible by a prominent and accessible executive summary—written in a “plain language” manner designed to be understandable to the public—that outlines the central judgments that support regulations, including the key findings of the analysis (such as central assumptions and uncertainties)...If an agency has analyzed the costs and benefits of regulatory alternatives to the planned action (as is required for economically significant regulatory actions), the summary should include such information.” See 2010 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities, page 51. Available at: <http://www.whitehouse.gov/sites/>

Does the analysis include a clear and transparent table presenting (to the extent feasible) anticipated benefits and costs (quantitative and qualitative)?<sup>33</sup>

[default/files/omb/legislative/reports/2010\\_Benefit\\_Cost\\_Report.pdf](http://www.whitehouse.gov/sites/default/files/omb/legislative/reports/2010_Benefit_Cost_Report.pdf)

<sup>33</sup> Circular A-4 states: “You need to provide an accounting statement with tables reporting benefit and cost estimates for each major final rule for your agency.” (P. 44). Circular A-4 includes an example of a format for agency consideration. OMB recommends “that agencies should clearly and prominently present, in the preamble and in the executive summary of the regulatory impact analysis, one or more tables summarizing the assessment of costs and benefits required under Executive Order 12866 Section 6(a)(3)(C)(i)-(iii). The tables should provide a transparent statement of both quantitative and qualitative benefits and costs of the proposed or planned action as well as of reasonable alternatives. The tables should include all relevant information that can be quantified and monetized, along with relevant information that can be described only in qualitative terms. It will often be useful to accompany a simple, clear table of aggregated costs and benefits with a separate table offering disaggregated figures, showing the components of the aggregate figures. To the extent feasible in light of the nature of the issue and the relevant data, all benefits and costs should be quantified and monetized. To communicate any uncertainties, we recommend that the table should offer a range of values, in addition to best estimates, and it should clearly indicate impacts that cannot be quantified or monetized. If nonquantifiable variables are involved, they should be clearly identified. Agencies should attempt, to the extent feasible, not merely to identify such variables but also to signify their importance.” See 2010 Report to Congress on the Benefits and Costs of Federal Regulations and Unfunded Mandates on State, Local, and Tribal Entities, page 51. Available at: [http://www.whitehouse.gov/sites/default/files/omb/legislative/reports/2010\\_Benefit\\_Cost\\_Report.pdf](http://www.whitehouse.gov/sites/default/files/omb/legislative/reports/2010_Benefit_Cost_Report.pdf)

## 10. SOCIAL INDICATORS

The social indicators presented in this chapter illustrate in broad terms how the Nation is faring in selected areas, including the economy, energy, the environment, health, and education, among others. The indicators shown in the tables in this chapter are only a subset drawn from the vast array of available data on conditions in the United States. In choosing indicators for these tables, priority was given to measures that were consistently available over an extended period. Such indicators make it easier to draw comparisons and establish trends.

The individual measures in these tables are influenced to varying degrees by many Government policies and programs, as well as by external factors beyond the Government's control. They do not measure the outcomes of Government policies, because they do not show the direct results of Government activities, but they do provide a quantitative measure of the progress or lack of progress toward some of the ultimate ends that Government policy is intended to promote. The "Program Evaluation" and "Benefit-Cost Analysis" chapters of this volume discuss approaches toward assessing directly the impacts of particular Government programs.

The President has made it clear that policy decisions should be based upon evidence—evidence about what the Nation's greatest needs and challenges are and evidence about what strategies are working. The social indicators in this chapter provide useful information both for prioritizing budgetary and policymaking resources and for evaluating how well existing approaches are working.

*Economic Conditions:* The 2008-2009 economic downturn produced the worst labor market in more than a generation. Unemployment is higher than at any time in the past quarter century, and the employment-to-population ratio has fallen below 60 percent for the first time since 1984. Real GDP per capita has declined over the past five years.

*Income and Wealth:* Over the entire period from 1960 to 2011 shown in the tables the primary pattern has been one of rising living standards. Real disposable income per capita has more than tripled as technological progress and the accumulation of human and physical capital have increased the Nation's productive capacity. Average household net worth has more than doubled. But these gains have not been evenly distributed. Median household income is up only 23 percent (since 1967) and was lower in 2010 than in 1997. The largest income gains have been concentrated among higher-income families and individuals. Similarly, the median wealth of households in the decade before retirement has risen, but not nearly as rapidly as mean wealth. Changing household composition is partly responsible for these trends. The numbers of two-earner households and single-parent households have both increased. Stagnating wages for

low-skill workers are another reason why rising average incomes have not had more impact on the most economically vulnerable Americans.

*Economic Inequality:* The rise in the share of national income received by those at the top of the income distribution can be seen in the two inequality measures in Table 10-1. The share of income accruing to the lower 60 percent of households has fallen from 32.3 percent in 1970 to 26.4 percent in 2010. The income share of the top one percent of taxpayers has risen from around eight percent in the two decades between 1960 and 1980 to 18 percent in 2008. The poverty rate, which fell dramatically between 1960 and 1970, as the economy prospered and as Social Security and other safety-net programs expanded, is at about the same level as it was in 1966—despite the large increase in per capita income—and 15 percent of American households are food-insecure.

*Setting the Stage for Future Prosperity:* The Nation's future economic prosperity depends on having a highly skilled workforce, an expanding stock of physical capital, including advanced infrastructure, and a business environment that encourages innovation. Environmental quality is also important for future well-being.

*Saving:* National saving is a key determinant of future prosperity because it supports capital accumulation. Table 10-1 shows that net national saving, which was already low by international standards when it averaged around 10 percent in the 1960s and 1970s, fell from 6.2 percent in 2000 to 2.0 percent in 2007 as Federal budget surpluses turned to deficits, and fell even further in the recession that followed. During the recent economic downturn, personal saving has rebounded to around 5 percent, but net national saving, which includes the Government's dis-saving, has turned slightly negative. Despite the current low saving rate, previous saving has resulted in a large accumulation of physical capital. The stock of physical capital including consumer durable goods like cars and appliances amounted to \$49 trillion in 2010, more than four times the size of the capital stock in 1960, after accounting for inflation.

*Innovation:* National Research and Development (R&D) spending has hovered between 2.5 percent and 2.8 percent of GDP for most of the past 50 years. Successful R&D can result in new innovations, which can also be encouraged by patent protection. Patents encourage innovation by awarding an inventor the right to exclude others from the use of an invention unless compensated. The patent system also assures publication of patented ideas distributing knowledge that might otherwise be kept confidential. Patents by U.S. inventors have increased threefold since 1960.

*Environmental Quality:* The Nation's future well-being and prosperity depends also on stewardship of our

natural resources, the environment, and on our ability to bring about a clean energy economy. The country has made major strides in improving air quality since the passage of the Clean Air Act in 1970. Concentrations of the main criteria pollutants tracked by the Environmental Protection Agency have declined significantly since 1970. The largest decline was for lead, which was removed from gasoline, but there have also been large declines in the emissions of carbon monoxide, nitrogen oxides, and sulfur dioxide. The air has become markedly cleaner in the United States as a result of this progress. Progress on improving water quality has also been noticeable as an increasing proportion of the population is served by improved water treatment facilities.

Moving forward, the greatest environmental challenge is reducing greenhouse gas emissions. In 2009, emissions were 5,618 teragrams. The President announced a target reduction of 17 percent in greenhouse gas emissions between 2005 and 2020, with an ultimate reduction of 83 percent between 2005 and 2050. While technological advances and a shift in production patterns mean that Americans now use about half as much energy per real dollar of GDP as they did 50 years ago, rising income levels mean that per capita consumption has remained roughly constant. Only seven percent of U.S. energy production is from renewable sources.

*Health, Education, and Civic Engagement:* Table 10-2 focuses on additional national priorities: health, education, community involvement and civic engagement.

**Health:** The first three groups of indicators in this table show measures related to the Nation's health. The United States devotes a large fraction of its income to health care, and that share has increased more than threefold since 1960. In the latest data, the share of GDP accounted for by health expenditures was 17.8 percent of GDP in 2009, and the share is projected to have remained near that level in 2010-2011. This is the largest it has ever been and well above what other nations spend on health. Despite the large expenditures on health care, many Americans were unable to obtain health insurance. In 2010, about 50 million people, 16 percent of the U.S. population, lacked health insurance. In 2010, the President signed into law the Affordable Care Act, which is projected to reduce the number of uninsured by 32 million Americans.

The United States has seen progress over the last 50 years in some important indicators of health status. Infant mortality has fallen from 26 deaths per 1,000 live births in 1960 to less than 7 deaths since 2000. In 2009, infant mortality fell to all-time low of 6.4 per 1,000 live births. Life expectancy at birth has increased substantially, rising by more than eight years since 1960, although it lags behind that in many other developed countries. Running counter to these positive trends, 21 percent of the adult population still smokes (a level below historic highs, but still troubling), and about 33 percent of the population is classified as obese according to criteria established by the Centers for Disease Control and Prevention, up from 15 percent twenty years ago.

**Education:** The Administration is committed to returning America to being number one in the world in

high school and college graduation rates and academic achievement, which is critical to long-term prosperity and growth. Between 1960 and 1980, the percentage of 18-24 year olds with a high school diploma increased from 60 percent to 81 percent, a gain of about 10 percentage points per decade. Progress has slowed since then with only a four percentage point gain over the past 30 years. College enrollment rates have continued to rise. In 1980 only a quarter of 18-24 year olds were enrolled in college. In the latest data that number was 41 percent. The most thorough measurement of education achievement is the National Assessment of Educational Progress (NAEP). These measures have been taken since the 1980s. They show only very gradual improvement in mathematics and no discernible progress in reading for American 17-year olds.

**Housing:** Americans are generally well housed, but some of the population faces housing problems. In 2009, about 5 percent of households with children lived in inadequate housing as defined by the Census Bureau. These problems usually consisted of poor plumbing, inadequate heating, or other physical maintenance problems. About six percent of these households were experiencing overcrowding. Both measures were down from levels reported in the 1980s. However, many families have experienced increased housing costs relative to income. In 2009, 39 percent of families with children were spending more than 30 percent of reported income on housing and utilities, up from 17 percent in 1980.

**Crime:** Since 1980, there has been a remarkable decline in violent crime. The two crime measures shown in Table 10-2 are based on different types of record keeping. The murder rate is based on reported homicides compiled by the Federal Bureau of Investigation from local law enforcement agencies, while the violent crime statistic is based on surveys of victims. The violent crime rate has declined to about 30 percent of its peak level in 1979. Meanwhile, the murder rate has been cut in half.

**Families:** Measures of family instability increased significantly up until around 1995. Since 1995, births to unmarried adolescents age 15 to 17 have dropped from around 30 per 1,000 women to about 19 per 1,000. After rising for more than three decades, the percentage of children living only with their mother stabilized at around 24 percent of all children from 1995 through 2009.

**Charitable Giving:** Americans increased their charitable contributions at an average real rate of slightly less than two percent per year between 1960 and 2008; real GDP per capita grew by slightly more than two percent per year over that interval. Charitable giving measured in real terms dropped slightly in 2008 and again in 2009, as the recession and capital losses cut into family resources, but the level of giving appears to have rebounded in 2010, and it remains above its level in 2006.

**Voting:** Another measure of American's willingness to participate in civic activity, the voting rate for President, was at 64 percent in 1960, but averaged about 55 percent from 1972 through 2000 before rising to 60 percent in 2004 and 62 percent in 2008.

*Other Compilations of Economic and Social Indicators:* There are many other sources of data on trends in American social and economic conditions, including the *Statistical Abstract* published annually by the Census Bureau (the Census Bureau has announced plans to cease publication of the *Statistical Abstract* following the 2012 volume). Some examples are described below. Cutting across a range of social and economic domains, the Interagency Forum on Child and Family Statistics annually assembles *American's Children: Key National Indicators of Well-Being* (<http://www.childstats.gov>). The Interagency Forum on Aging-Related Statistics publishes *Older Americans: Key Indicators of Well-Being* every other year ([http://www.agingstats.gov/agingstatsdotnet/main\\_site/default.aspx](http://www.agingstats.gov/agingstatsdotnet/main_site/default.aspx)).

There are also topic-specific indicators, which highlight performance in specific areas. *Science and Engineering Indicators*, published by the National Science Board, provides a broad base of quantitative information on the U.S.

and international science and engineering enterprise: (<http://www.nsf.gov/statistics/indicators>). The Science Resources Statistics Division at the National Science Foundation is doing developmental work on measuring innovation, an important component of the scientific enterprise not currently included in our measures. *Healthy People 2020* within the Department of Health and Human Services offers a statement of national health objectives that identifies the most significant preventable threats to health and establishes national goals to reduce these threats. The National Center for Health Statistics annually publishes *Health, United States* (<http://www.cdc.gov/nchs/hus.htm>), a comprehensive compilation of health indicators. The National Center for Education Statistics within the Department of Education publishes the *Condition of Education* (<http://nces.ed.gov/programs/coe>). The website includes a set of indicators and also special analyses and a user's guide.

Table 10–1. ECONOMIC AND SOCIAL INDICATORS

Calendar Years		1960	1970	1980	1990	1995	2000	2005	2009	2010	2011
<b>Economic Conditions</b>											
Living Standards:											
1	Real GDP per person (2005 dollars) <sup>1</sup> .....	15,716	20,915	25,675	32,157	34,122	39,752	42,715	41,409	42,308	42,631
	average annual percent change (5-year trend) .....	0.8	2.3	2.6	2.3	1.2	3.1	1.4	-0.2	-0.2	-0.4
2	Real disposable income per capita average (2005 dollars) <sup>2</sup> .....	10,860	15,151	18,855	23,557	24,939	28,886	31,318	32,141	32,446	32,495
	average annual percent change (5-year trend) .....	1.2	3.2	2.0	1.8	1.1	3.0	1.6	0.6	0.7	0.1
3	Real median income: all households (2010 dollars) .....	N/A	43,055	44,616	48,423	48,408	53,164	51,739	50,599	49,445	N/A
	average annual percent change (5-year trend) .....	N/A	N/A	0.5	1.2	-0.0	1.9	-0.5	-0.2	-0.9	N/A
4	Poverty rate (%) <sup>2</sup> .....	22.2	12.6	13.0	13.5	13.8	11.3	12.6	14.3	15.1	N/A
5	Food-insecure households (percent of all households) <sup>3</sup> .....	N/A	N/A	N/A	N/A	11.9	10.5	11.0	14.7	14.5	N/A
Jobs and Unemployment:											
6	Civilian unemployment rate (%) .....	5.5	4.9	7.1	5.5	5.6	4.0	5.1	9.3	9.6	9.0
7	Unemployment plus marginally attached and underemployed (%) .....	N/A	N/A	N/A	N/A	10.0	7.0	8.9	16.3	16.8	15.9
8	Employment-population ratio % <sup>4</sup> .....	56.1	57.4	59.2	62.8	62.9	64.4	62.7	59.3	58.5	58.4
9	Payroll employment change - December to December (millions) .....	-0.4	-0.5	0.3	0.3	2.2	2.0	2.5	-5.1	0.9	1.6
10	Payroll employment change - 5-year annual average (millions) .....	0.2	1.7	2.6	2.1	1.8	2.9	0.5	-0.6	-0.9	-1.0
Economic Inequality:											
11	Income share of lower 60% of all households .....	N/A	32.3	31.2	29.3	28.0	27.3	26.6	26.6	26.4	N/A
12	Income share of top 1% of all taxpayers .....	8.4	7.8	8.2	13.0	13.5	16.5	17.4	N/A	N/A	N/A
Wealth Creation:											
13	Net national saving rate (% of GDP) <sup>5</sup> .....	10.4	8.1	7.1	3.9	4.7	6.2	3.0	-1.9	-0.4	-0.3
14	Personal Saving Rate (% of Disposable Personal Income) <sup>5</sup> .....	7.2	9.4	9.8	6.5	5.2	2.9	1.5	5.1	5.3	4.5
15	Average household net worth (2011 dollars) <sup>5</sup> .....	233,621	280,457	307,200	366,831	412,725	523,483	608,807	493,011	515,875	483,249
16	Median wealth of households aged 55–64 (2009 dollars) <sup>6</sup> .....	N/A	N/A	N/A	166,668	163,752	210,052	281,741	222,300	N/A	N/A
Innovation:											
17	R&D spending (% of GDP) .....	2.6	2.5	2.3	2.6	2.5	2.7	2.6	2.8	2.7	2.7
18	Patents issued to U.S. residents (thousands) .....	42.3	50.6	41.7	56.1	68.2	103.6	88.5	107.0	132.5	N/A
19	Multifactor productivity (average 5 year percent change) .....	1.0	0.9	0.8	0.7	0.5	1.3	1.8	0.2	0.6	N/A
20	Nonfarm output per hour (average 5 year percent change) <sup>1</sup> .....	1.8	2.1	1.1	1.5	1.5	2.7	3.1	1.4	1.9	1.9
Capital and Infrastructure:											
21	Bridges that are structurally deficient or functionally obsolete (%) <sup>7</sup> .....	N/A	N/A	N/A	N/A	31.8	28.6	26.3	24.8	24.3	N/A
22	Real net stock of fixed assets and consumer durable goods (\$2010 bills) .....	11,257	16,430	22,639	29,946	33,316	39,209	45,155	48,872	49,324	N/A
<b>Energy and Environment:</b>											
Air Quality - Mean Pollution Concentration levels <sup>8</sup> :											
23	Carbon Monoxide (ppm) based on 104 monitoring sites .....	N/A	N/A	8.951	6.130	4.797	3.461	2.296	N/A	N/A	N/A
24	Ground Level Ozone (ppm) based on 247 monitoring sites .....	N/A	N/A	0.101	0.089	0.090	0.082	0.080	0.070	0.073	N/A
25	Lead (ug/m3) based on 31 monitoring sites .....	N/A	N/A	1.338	0.525	0.357	0.270	0.194	0.226	0.144	N/A
26	Nitrogen Dioxide (ppb) based on 81 monitoring sites .....	N/A	N/A	27.341	23.935	22.438	20.034	16.871	13.564	13.076	N/A
Particulate Matter (ug/m3):											
27	PM10 based on 279 monitoring sites .....	N/A	N/A	N/A	82.663	68.551	64.344	59.093	50.624	51.022	N/A
28	PM 2.5 based on 646 monitoring sites .....	N/A	N/A	N/A	N/A	N/A	13.620	12.958	9.816	9.992	N/A
29	Sulfur Dioxide (ppm) based on 141 monitoring sites .....	N/A	N/A	11.830	8.306	5.926	5.102	4.299	2.528	2.443	N/A
Water Quality:											
30	Population served by secondary treatment or better (millions) <sup>6</sup> .....	53.4	85.9	117.9	154.4	163.3	189.1	205.2	208.0	210.2	212.5
Climate Change:											
31	Net greenhouse gas emissions (teragrams CO2 equivalent) <sup>9</sup> .....	N/A	N/A	N/A	5,320	5,928	6,536	6,157	5,618	N/A	N/A
32	Per capita greenhouse gas emissions (megagrams CO2 equivalent) .....	N/A	N/A	N/A	21.3	22.3	23.2	20.8	18.3	N/A	N/A
33	Per 2005\$ of GDP greenhouse emissions (kilograms CO2 equivalent) .....	N/A	N/A	N/A	0.663	0.652	0.583	0.488	0.442	N/A	N/A
Energy:											
34	Energy consumption per capita (millions of BTUs) .....	250	331	344	338	342	350	339	308	317	N/A
35	Energy consumption per real dollar of GDP (thousands of BTUs) .....	15.9	15.9	13.4	10.5	10.0	8.8	7.9	7.3	7.4	N/A
36	Energy production from renewable sources (% of total) .....	N/A	N/A	N/A	N/A	N/A	N/A	6.4	8.2	7.5	N/A

<sup>1</sup> Values for 2011 based on Administration projection for 2011.Q4 growth.

<sup>2</sup> The poverty rate does not reflect noncash government transfers.

<sup>3</sup> These households were unable to acquire adequate food to meet the needs of all their members at some time during the year because they had insufficient money or other resources for food.

<sup>4</sup> Civilian employment as a percent of the civilian noninstitutional population age 16 and above.

<sup>5</sup> 2011 through 2011.Q3 only.

<sup>6</sup> Data interpolated for some years.

<sup>7</sup> Bridges are structurally deficient if they have been restricted to light vehicles, require immediate rehabilitation, or are closed. They are functionally obsolete if they no longer meet the criteria for the system of which the bridge is carrying a part.

<sup>8</sup> ppm -- parts per million; ug/m3 -- micrograms per cubic meter

<sup>9</sup> This is a net measure reflecting both sources and sinks of greenhouse gas.

Table 10–2. ECONOMIC AND SOCIAL INDICATORS

Calendar Years		1960	1970	1980	1990	1995	2000	2005	2009	2010	2011
<b>Access to Health Care:</b>											
37	Total national health expenditures (percent of GDP) <sup>1</sup> .....	5.2	7.2	9.2	12.5	13.9	13.8	16.0	17.8	17.8	17.9
38	Percentage of population without health insurance .....	N/A	N/A	N/A	12.9	14.4	13.1	14.6	16.1	16.3	N/A
39	% of children age 19–35 months with recommended immunizations <sup>2</sup> .....	N/A	N/A	N/A	N/A	N/A	72.8	80.8	71.9	N/A	N/A
<b>Health Status:</b>											
40	Infant mortality (per 1000 live births) <sup>3</sup> .....	26.0	20.0	12.6	9.2	7.6	6.9	6.9	6.4	N/A	N/A
41	Low birthweight [<2,500 gms] percentage of babies .....	7.7	7.9	6.8	7.0	7.3	7.6	8.2	8.2	8.1	N/A
42	Life expectancy at birth (years) <sup>3</sup> .....	69.7	70.8	73.7	75.4	75.8	76.8	77.4	78.2	N/A	N/A
<b>Health Risks:</b>											
43	Cigarette smokers (% population 18 and older) .....	N/A	39.2	32.7	25.3	24.6	23.1	20.8	20.6	N/A	N/A
44	Obesity (% of population with BMI over 30) <sup>4</sup> .....	13.3	N/A	15.1	22.9	N/A	30.1	33.9	N/A	N/A	N/A
45	Alcohol (% high school seniors engaged in heavy drinking) <sup>5</sup> .....	N/A	N/A	41.2	32.2	29.8	30.0	26.2	25.2	N/A	N/A
46	Physical activity: % of adults engaged in regular physical activity <sup>6</sup> .....	N/A	N/A	N/A	N/A	N/A	15.0	17.1	19.1	N/A	N/A
<b>Education:</b>											
47	High school graduates (% of population 25 and older) .....	44.6	55.2	68.6	77.6	81.7	84.1	85.2	86.7	87.1	N/A
48	Percentage of 18–24 year olds with a high school diploma .....	59.9	78.8	80.9	81.7	80.8	81.9	82.9	84.3	N/A	N/A
49	Percentage of 18–24 year olds enrolled in college .....	N/A	25.7	25.6	32.0	34.3	35.5	38.9	41.3	N/A	N/A
50	College graduates (% of population 25 and older) .....	8.4	11.0	17.0	21.3	23.0	25.6	27.6	29.5	29.9	N/A
National Assessment of Educational Progress <sup>7</sup>											
51	Reading 17-year olds .....	N/A	N/A	283	288	286	285	284	N/A	N/A	N/A
52	Mathematics 17-year olds .....	N/A	N/A	297	303	305	306	305	N/A	N/A	N/A
<b>Housing:</b>											
53	Percentage of families with children with inadequate housing <sup>8</sup> .....	N/A	N/A	9	9	7	7	5	5	N/A	N/A
54	Percentage of families with children with crowded housing .....	N/A	N/A	9	7	7	7	6	6	N/A	N/A
55	Percentage of families with children with costly housing <sup>9</sup> .....	N/A	N/A	17	25	28	28	34	39	N/A	N/A
<b>Crime:</b>											
56	Violent crime rate (per 100,000 population 12 and older) <sup>10</sup> .....	N/A	N/A	4,940	4,410	4,610	2,740	2,100	1,690	1,490	N/A
57	Murder rate (per 100,000 population) <sup>11</sup> .....	5.1	7.8	10.2	9.4	8.2	5.5	5.6	5.0	4.8	N/A
<b>Families:</b>											
58	Births to unmarried women age 15–17 (per 1,000) .....	N/A	N/A	20.6	29.6	30.1	23.9	19.7	19.3	N/A	N/A
59	Children living with mother only (% of all children) .....	9.2	11.6	18.6	21.6	24.0	22.3	23.4	24.4	25.2	N/A
<b>Civic Engagement:</b>											
60	Individual charitable giving per capita (2011 dollars) .....	321	460	489	559	529	808	863	778	782	N/A
61	Percentage of Americans volunteering <sup>12</sup> .....	N/A	N/A	N/A	20.4	N/A	N/A	27.0	26.8	26.3	N/A
62	Voting for President by election year (% eligible population) <sup>13</sup> .....	(1960)	(1968)	(1972)	(1976)	(1980)	(1984)	(1988)	(2004)	(2008)	(2012)
		63.8	61.5	56.2	54.8	54.2	55.2	52.8	60.1	61.7	N/A

<sup>1</sup> The 2010 and 2011 values are projected, the last actual data are for 2009.

<sup>2</sup> The 4:3:1:3:3 series consisting of 4 doses (or more) of diphtheria, tetanus toxoids, and pertussis (DTP) vaccines, diphtheria and tetanus toxoids (DT), or diphtheria, tetanus toxoids, and any acellular pertussis (DTaP) vaccines; 3 doses (or more) of poliovirus vaccines; 1 dose (or more) of any measles-containing vaccine; 3 doses (or more) of Haemophilus influenzae type b (Hib) vaccines; and 3 doses (or more) of hepatitis B vaccines.

<sup>3</sup> Data for 2009 are preliminary.

<sup>4</sup> BMI refers to body mass index. A BMI over 30 is the criterion for obesity used by the Centers for Disease Control and Prevention.

<sup>5</sup> Data are interpolated. Percentage of high school students who had five or more drinks in a row at least once within the two weeks prior to the survey.

<sup>6</sup> Participation in leisure-time aerobic and muscle-strengthening activities that meet the 2008 Federal physical activity guidelines for adults 18 years of age and over.

<sup>7</sup> Data are interpolated. Actual survey years were 1973, 1978, 1982, 1986, 1990, 1992, 1994, 1996, 1999, 2004, and 2008.

<sup>8</sup> Inadequate housing has moderate to severe physical problems, usually poor plumbing or heating or upkeep problems. Some data are interpolated.

<sup>9</sup> Expenditures for housing and utilities exceed 30 percent of reported income. Some data are interpolated.

<sup>10</sup> Includes crimes both reported and not reported to law enforcement. Offenses include homicide, rape, robbery, aggravated assault and simple assault.

<sup>11</sup> Based on reported crimes. Not all crimes are reported, and the fraction that go unreported may have varied over time, preliminary data for 2008.

<sup>12</sup> Data from 1974, 1989, and since 2005 are drawn from the Current Population Survey.

<sup>13</sup> As computed by Professor Michael McDonald, George Mason University, after adjusting the population for those not eligible to vote in Presidential elections.

Table 10-3. SOURCES FOR ECONOMIC AND SOCIAL INDICATORS

Indicator:	Source:
<b>Economic, Environmental, and Energy Indicators (Table 10-1):</b>	
Real GDP per person .....	U.S. Department of Commerce, Bureau of Economic Analysis, National Economic Accounts Data.
Real disposable income per capita .....	U.S. Department of Commerce, Bureau of Economic Analysis, National Economic Accounts Data.
Real median income: all households .....	U.S. Census Bureau, Housing and Household Economic Statistics Division
Poverty rate .....	U.S. Census Bureau, Housing and Household Economic Statistics Division
Food-insecure households .....	U.S. Census Bureau, Current Population Survey Food Security Supplement; tabulated by U.S. Department of Agriculture, Economic Research Service
Civilian unemployment rate .....	U.S. Department of Labor, Bureau of Labor Statistics, Current Population Survey.
Unemployment plus marginally attached and underemployed .....	U.S. Department of Labor, Bureau of Labor Statistics, Current Population Survey.
Employment-population ratio .....	U.S. Department of Labor, Bureau of Labor Statistics, Current Population Survey.
Payroll employment .....	U.S. Department of Labor, Bureau of Labor Statistics, Current Employment Statistics program.
Income share of lower 60% of all households .....	U.S. Census Bureau, Housing and Household Economic Statistics Division
Income share of top 1% of all taxpayers .....	Thomas Piketty and Emmanuel Saez, "Income Inequality in the United States, 1913-1998" Quarterly Journal of Economics, 118(1), 2003, 1-39 (tables and figures updated to 2008, July 2010)
Net national saving rate .....	U.S. Department of Commerce, Bureau of Economic Analysis, National Economic Accounts Data.
Personal Saving Rate .....	U.S. Department of Commerce, Bureau of Economic Analysis, National Economic Accounts Data.
Average household net worth .....	Board of Governors of the Federal Reserve System, Flow of Funds Accounts of the United States, and U.S. Census Bureau, Housing and Economic Statistics Division.
Median wealth of households aged 55-64 .....	Board of Governors of the Federal Reserve System, 2009 Survey of Consumer Finances Chartbook.
R&D spending .....	National Science Foundation, Division of Science Resources Statistics, National Patterns of R&D Resources
Patents issued to U.S. residents .....	U.S. Patent and Trademark Office, Electronic Information Products Division, Patent Technology Monitoring Team, submissions to the World Intellectual Property Organization.
Multifactor productivity .....	U.S. Department of Labor, Bureau of Labor Statistics, Major Sector Productivity Program.
Nonfarm output per hour .....	U.S. Department of Labor, Bureau of Labor Statistics, Major Sector Productivity Program.
Bridges that are structurally deficient or functionally obsolete .....	U.S. Federal Highway Administration, Office of Bridge Technology, "National Bridge Inventory."
Real net stock of fixed assets and consumer durable goods .....	U.S. Department of Commerce, Bureau of Economic Analysis, National Economic Accounts Data.
Carbon Monoxide .....	U.S. Environmental Protection Agency, Office of Air and Radiation, Air Trends
Ground Level Ozone .....	U.S. Environmental Protection Agency, Office of Air and Radiation, Air Trends
Lead .....	U.S. Environmental Protection Agency, Office of Air and Radiation, Air Trends
Nitrogen Dioxide .....	U.S. Environmental Protection Agency, Office of Air and Radiation, Air Trends
PM10 .....	U.S. Environmental Protection Agency, Office of Air and Radiation, Air Trends
PM 2.5 .....	U.S. Environmental Protection Agency, Office of Air and Radiation, Air Trends
Sulfur Dioxide .....	U.S. Environmental Protection Agency, Office of Air and Radiation, Air Trends
Population served by secondary treatment or better .....	U.S. Environmental Protection Agency, Clean Watersheds Needs Survey 2008 Report to Congress, June 10, 2010 (includes a projection for 2028) EPA-832-R-10-002.
Net greenhouse gas emissions .....	U.S. Environmental Protection Agency, 2010 Inventory of Greenhouse Gases Emissions and Sinks: 1990-2008.
Energy consumption per capita .....	U.S. Energy Information Administration, Annual Energy Review 2009, August 19, 2010 energy overview table 1.5.
Energy consumption from renewable sources .....	U.S. Energy Information Administration, Independent Statistics and Analysis
<b>Health, Education, and Other Social Indicators (Table 10-2):</b>	
Total national health expenditures .....	Centers for Medicare and Medicaid Services, National Health Expenditures Data, January 2011.
Percentage of population without health insurance .....	U.S. Census Bureau, Housing and Household Economic Statistics Division
% of children age 19-35 months with recommended immunizations .....	Childstats.gov, Forum on Child and Family Statistics
Infant mortality .....	Centers for Disease Control and Prevention, National Vital Statistics Report
Low birthweight percentage of babies .....	Centers for Disease Control and Prevention, National Vital Statistics Report
Life expectancy at birth .....	Centers for Disease Control and Prevention, National Vital Statistics Report
Cigarette smokers (% population 18 and older) .....	Health United States 2010, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics
Obesity (% of population with BMI over 30) (d) .....	Health United States 2010, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics
% high school students engaged in heavy drinking .....	Health United States 2010, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics
% of adults engaged in regular physical activity .....	Health United States 2010, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics
High school graduates (% of population 25 and older) .....	U.S. Census Bureau, Current Population Survey
Percentage of 18-24 year olds with a high school diploma .....	U.S. Census Bureau, Current Population Survey
Percentage of 18-24 year olds enrolled in college .....	U.S. Census Bureau, Current Population Survey
College graduates (% of population 25 and older) .....	U.S. Census Bureau, Current Population Survey
NAEP: Reading 17-year olds .....	National Assessment of Educational Progress, National Center for Education Statistics

**Table 10–3. SOURCES FOR ECONOMIC AND SOCIAL INDICATORS—Continued**

Indicator:	Source:
NAEP: Mathematics 17-year olds .....	National Assessment of Educational Progress, National Center for Education Statistics
Percentage of families with children with inadequate housing .....	U.S. Census Bureau, American Housing Survey. Tabulated by U.S. Department of Housing and Urban Development
Percentage of families with children with crowded housing .....	U.S. Census Bureau, American Housing Survey. Tabulated by U.S. Department of Housing and Urban Development
Percentage of families with children with costly housing .....	U.S. Census Bureau, American Housing Survey. Tabulated by U.S. Department of Housing and Urban Development
Violent crime rate (per 100,000 population 12 and older) .....	U.S. Department of Justice, Bureau of Justice Statistics, Violent Crime Trends
Murder rate (per 100,000 population) .....	U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division
Births to unmarried women age 15-17 (per 1,000) .....	Centers for Disease Control and Prevention, National Vital Statistics Report
Children living with mother only .....	Annual Social and Economic Supplement to the Current Population Survey, Detailed Poverty Tabulations various years
Individual Charitable Giving .....	Statistical Abstract 2012, Center on Philanthropy at Indiana University, Giving USA.
Percentage of Americans volunteering .....	Corporation for National and Community Service, "Volunteer Growth in America: A Review of Trends since 1974" based on the Current Population Survey.
Voting for President by election year (% eligible population) .....	The United States Elections Project, Dr. Michael McDonald, George Mason University, Fairfax, Virginia.



## 11. IMPROVING THE FEDERAL WORKFORCE

The United States has overcome great challenges throughout our history because Americans of every generation have stepped forward to aid their Nation through service, both in civilian government and in the Uniformed Services. Today's Federal public servant carries forward that proud American tradition. Whether it is defending our homeland, restoring confidence in our financial system and supporting an historic economic recovery effort, providing health care to our veterans, or searching for cures to the most vexing diseases, we are fortunate to be able to rely upon a skilled workforce committed to public service.

A high-performing government depends on an engaged, well-prepared, and well-trained workforce with the right set of skills for the missions the government needs to achieve. However, tight fiscal resources, rapidly changing problems, and new technologies that change the way a program can be delivered are all challenges the Federal workforce must address. This chapter discusses trends in Federal employment, composition, and compensation, and presents the Administration's plans for achieving the talented Federal workforce needed to serve the American people effectively and efficiently.

### Trends in Federal Employment

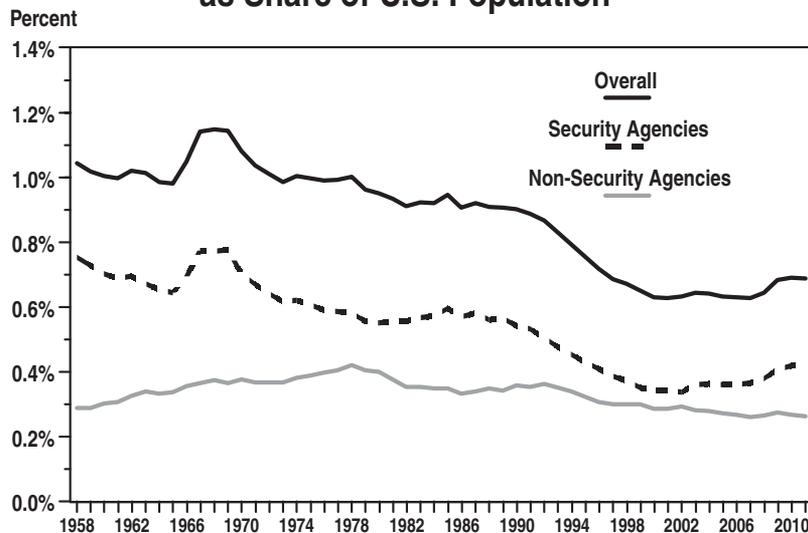
The size of the Federal civilian workforce relative to the country's population has declined dramatically over

the last several decades, notwithstanding occasional upticks due, for example, to military conflicts and the enumeration of the Census. In the 1950s and 1960s, there were on average 92 residents for every Federal worker. In the 1980s and 1990s, there were on average 106 residents for every Federal worker. By 2011, the ratio had increased to 145 residents for every Federal worker. Since the 1950s and 1960s, the U.S. population increased by 76 percent, the private sector workforce surged 133 percent, while the size of the Federal workforce rose just 11 percent. Relative to the private sector, the Federal workforce is less than half the size it was back in the 1950s and 1960s. The picture that emerges is one of a Federal civilian workforce whose size has significantly shrunk compared to the size of the overall U.S. population, the private sector workforce, and the size of Federal expenditures.

Chart 11-1 shows Federal civilian employment (excluding the U.S. Postal Service) as a share of the U.S. resident population from 1958 to 2011. The chart shows the overall decline noted above in both security and non-security agencies.

Except for employment peaks associated with the decennial census, Federal employment, in absolute terms, increased slightly in the 1980s and then dropped in the 1990s. This overall downward trend began to reverse itself in 2001, following the September 11 attack. Following that tragic event, the Federal workforce expanded to deal with national security and homeland safety issues

**Chart 11-1. Federal Civilian Workforce as Share of U.S. Population**



Source: Office of Personnel Management.

Notes: Security agencies include the Department of Defense, the Department of Homeland Security, the Department of State, and the Department of Veterans Affairs. Nonsecurity agencies include the remainder of the Executive Branch.

and to serve our veterans. Between 2001 and 2011, security agency employment grew, while non-security employment declined. For example, civilians working for the Department of the Army grew by more than 60,000, with a similar level of increase in people working for the Veterans Health Administration. Customs and Border Protection also grew more than 30,000 to keep our citizens safe at home.

Following this decade of growth, total Federal employment levels flattened out with minimal year-to-year shifts in 2012 and 2013. Table 11-2 shows actual Federal civilian full-time equivalent (FTE) employment levels in the Executive Branch by agency for 2010 and 2011, with estimates for 2012 and 2013. Estimated employment levels for 2013 result in nearly flat levels – a 0.1 percent increase when compared to the prior year. Capped levels of budget authority enacted through the Budget Control Act (BCA) and in the 2013 Budget are having a direct impact on FTE levels in all agencies. Among the 34 departments and agencies presented in Table 11-2, increases exist in less than one-third. Among the 15 Cabinet agencies, increases of more than 1 percent exist at only four – the Departments of Veterans Affairs (VA), Commerce (DOC), Health and Human Services (HHS), and the Treasury.

In security agencies, limited increases in VA and the Department of Homeland Security correlate with increased demand for services in veterans' medical care and continued emphasis on strengthening air travel safety and border protection. Even prior to the enactment of the BCA, in January 2011, the Department of Defense (DOD) initiated a policy to reduce staffing with the goal of holding to 2010 levels for most of the Department. The graduated reductions estimated by DOD in both 2012 and 2013 seek to achieve this goal while minimizing the impact on the workforce and the communities in which those workers live.

Beyond the security agencies, 2013 increases in non-security agencies are narrowly focused and are frequently supported by congressionally-authorized fees, not taxpayer dollars. Increased receipts from fees support timely commercialization of innovative technologies through faster and higher-quality patent reviews at the Patent and Trade Office of DOC, stronger food safety measures at the Food and Drug Administration of HHS, and enhancements to create stronger, more stable financial markets consistent with the Wall Street Reform Act. Increases in the category listed as "All other small agencies" in Table 11-2 are similarly driven by efforts to reform Wall Street and protect its customers. Commitments to activate new Federal prisons already constructed with funding appropriated as early as 2001 and as recently as 2010, result in limited necessary personnel increases at the Department of Justice in 2012 and 2013. And stepping up Internal Revenue Service (Treasury) program integrity efforts to ensure companies and individuals are paying their fair share is an investment that more than pays for itself and will result in a five-to-one increase in tax revenues.

Beneath many of the staffing topline are programs that pursue aggressive actions to reduce and reallocate staff from lower to higher priority programs. Some agen-

cies have imposed hiring freezes, others are using replacement ratios to allow fewer hires than separations, and many are offering early retirement and separation incentives. Across the Government, agencies are embracing a variety of workforce reduction tools to bring their personnel levels down. These complement other aggressive cost-saving measures across all agencies such as real estate closures, consolidation of back-office functions, and strategic sourcing, as well as agency-specific initiatives, such as the Department of Agriculture's Blueprint for Stronger Service to streamline operations, launched in January 2012, which involves consolidating more than 200 offices across the country while ensuring that the most vital services the offices provide continue.

### Federal Pay Trends

After more than a decade when the percentage increase in annual Federal pay raises did not keep pace with the percentage increase in private sector pay raises, Congress passed the Federal Employees Pay Comparability Act of 1990 (FEPCA) pegging Federal pay raises, as a default, to changes in the 15-month-lagged Employment Cost Index (ECI) series of wage and salaries for private industry workers, and to locality pay adjustments. The ECI measures private sector pay, holding constant industry and occupation composition. The law gives the President the authority to propose alternative pay adjustments for both base and locality pay. Presidents have regularly proposed alternative pay plans. Chart 11-2 shows how the Federal pay scale has compared to the ECI since 1990.

In late 2010, as one of several steps the Administration took to put the Nation on a sustainable fiscal path, the President proposed and Congress enacted a two-year freeze on across-the-board pay adjustments for civilian Federal employees. This has created structural savings in the Budget of \$60 billion over 10 years. The President also issued a memorandum directing agencies to freeze pay schedules and forgo general pay increases for civilian Federal employees in administratively determined pay systems.

For 2013, the President is proposing a 0.5 percent pay increase. While modest, the Administration's decision to propose an increase in pay for civilian Federal employees reflects the understanding that while the continuation of a pay freeze was unsustainable, the tight fiscal environment required a responsible approach that enables the investment needed to spur jobs and economic growth for decades to come. This pay increase proposal permits savings of approximately \$28 billion over 10 years and \$2 billion in 2013 within the BCA caps, reallocated to priorities and services the American people depend on and that would not otherwise have been available under the spending caps. Proposing a pay increase below the level of the private sector (or ECI) was not taken lightly, given the two-year pay freeze in 2011 and 2012 -- but recognizes the real constraints of the current budget situation.

The 2013 Budget also includes a deficit reduction proposal that would dedicate an additional 1.2 percent of employee salary (phased-in at 0.4 percent over three years) for contri-

butions toward retirement benefits. This change in employee contribution levels would not change the amount of each Federal employee's pension benefit, but would result in \$21 billion over 10 years in mandatory savings.

### Composition of the Federal Workforce and Factors Affecting Federal Pay

Federal worker compensation receives a great deal of attention, in particular, in comparison to that of private sector workers. Comparisons of the pay of Federal employees and private sector employees, for example, should account for factors affecting pay, such as differences in skill levels, complexity of work, scope of responsibility, size of organization, location, experience level, and exposure to personal danger. Some of the factors affecting pay are discussed below.

**Type of occupation.** The last half century has seen significant shifts in the composition of the Federal workforce, with related effects on pay. Fifty years ago, most white-collar Federal employees performed clerical tasks, such as posting Census figures in ledgers and retrieving taxpayer records from file rooms. Today their jobs are vastly different, requiring advanced skills to serve a knowledge-based economy. Professionals such as doctors, engineers, scientists, statisticians, and lawyers now make up a large portion of the Federal workforce. Between 1981 and 2011, the proportion of the Federal workforce in clerical occupations fell from 19.4 percent to 5.1 percent of the workforce, and the proportion of blue-collar workers fell from 22.0 percent to 9.7 percent.

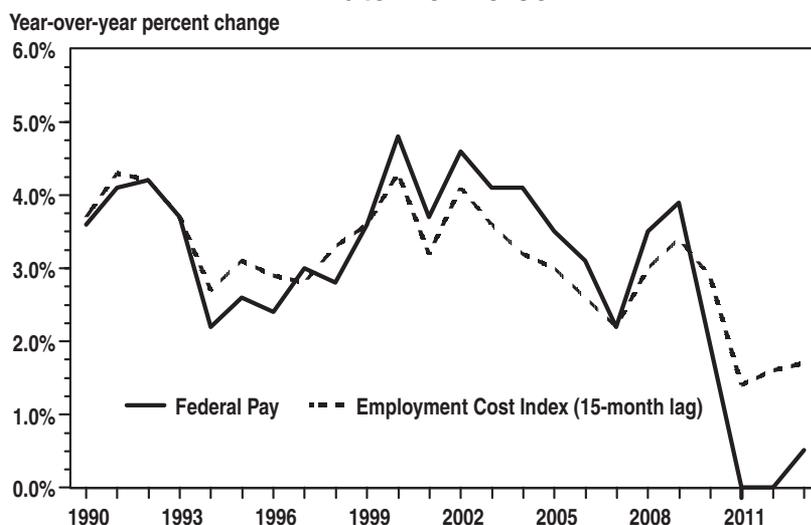
Today, a large number of Federal employees must manage highly sensitive tasks that require great skill, experience, and judgment. Federal employees increasingly need

sophisticated management and negotiation skills to affect change, not just across the Federal Government, but also with other levels of government, not-for-profit providers, and for-profit contractors. Using data from the Current Population Survey 2007-2011 of full-time, full-year workers, Table 11-1 breaks all Federal and private sector jobs into 22 occupation groups. That breakdown shows that Federal and private sector workers do very different types of work. More than half (55 percent) of Federal workers work in the nine highest-paying occupation groups as judges, engineers, scientists, nuclear plant inspectors, etc., compared to about a third (33 percent) of private sector workers in those same nine highest paying occupation groups. In contrast, 46 percent of private sector workers work in the seven lowest-paying occupation groups as cooks, janitors, service workers, clerks, laborers, manufacturing workers, etc. About 27 percent of Federal workers work in those seven lowest-paying occupation groups.

**Education level.** The size and complexity of much Federal work necessitates a highly educated workforce whether that work is analyzing security and financial risks, forecasting weather, planning bridges to withstand extreme weather events, conducting research to advance human health and energy efficiency, or advancing science to fuel future economic growth. Chart 11-3 presents the comparative differences in the education level of the Federal civilian and private sector workforce. About 21 percent of Federal workers have a master's degree, professional degree, or doctorate versus only 9 percent in the private sector. Only one-in-five Federal employees has not attended college, whereas 41 percent of workers in the private sector have not attended college.

**Size of organization and responsibilities.** Another important difference between Federal workers and pri-

Chart 11-2. Pay Raises for Federal vs. Private Workforce



Source: Public Laws, Executive Orders, and the Bureau of Labor Statistics.

Notes: Federal pay is for civilians and includes base and locality pay. Employment Cost Index is the wages and salaries, private industry workers series.

**Table 11–1. OCCUPATIONS OF FEDERAL AND PRIVATE SECTOR WORKFORCES**  
(Grouped by Average Private Sector Salary)

Occupational Groups	Percent	
	Federal Workers	Private Sector Workers
<b>Highest Paid Occupations Ranked by Private Sector Salary</b>		
Lawyers and judges .....	1.7%	0.6%
Engineers .....	4.1%	1.9%
Scientists and social scientists .....	4.8%	0.6%
Managers .....	11.2%	13.2%
Doctors, nurses, psychologists, etc. ....	7.4%	5.1%
Miscellaneous professionals .....	15.1%	8.0%
Administrators, accountants, HR personnel .....	7.0%	2.6%
Pilots, conductors, and related mechanics .....	2.0%	0.8%
Inspectors .....	1.2%	0.3%
<b>Total Percentage</b> .....	<b>54.5%</b>	<b>33.1%</b>
<b>Medium Paid Occupations Ranked by Private Sector Salary</b>		
Sales including real estate, insurance agents .....	1.0%	6.6%
Other miscellaneous occupations .....	3.2%	4.4%
Automobile and other mechanics .....	1.8%	3.0%
Law enforcement and related occupations .....	8.5%	0.8%
Office workers .....	2.5%	6.3%
Social workers .....	1.5%	0.5%
<b>Total Percentage</b> .....	<b>18.5%</b>	<b>21.5%</b>
<b>Lowest Paid Occupations Ranked by Private Sector Salary</b>		
Drivers of trucks and taxis .....	0.7%	3.4%
Laborers and construction workers .....	4.4%	10.4%
Clerks .....	14.2%	11.4%
Manufacturing .....	2.5%	7.8%
Other miscellaneous service workers .....	2.5%	6.3%
Janitors and housekeepers .....	1.6%	2.4%
Cooks, bartenders, bakers, and wait staff .....	0.9%	4.0%
<b>Total Percentage</b> .....	<b>26.8%</b>	<b>45.7%</b>

Source: 2007–2011 Current Population Survey.

Notes: Federal workers exclude the military and Postal Service, but include all other Federal workers in the Executive, Legislative, and Judicial Branches. However, the vast majority of these employees are civil servants in the Executive Branch. Private sector workers exclude the self-employed. Neither category includes state and local government workers. This analysis is limited to full-time, full-year workers, i.e. those with at least 1,500 annual hours of work.

private sector workers is the average size of the organizations in which they work. Federal agencies are large and often face challenges of enormous scale, such as distributing benefit payments to over 60 million Social Security and Supplemental Security Income beneficiaries each year, providing medical care to 8.8 million of the Nation's veterans, and managing defense contracts costing billions of dollars. Workers from large firms (those with 1,000 or more employees) are paid about 14 percent more than workers from small firms (those with fewer than 100 employees), even after accounting for occupational type, level of education, and other characteristics.

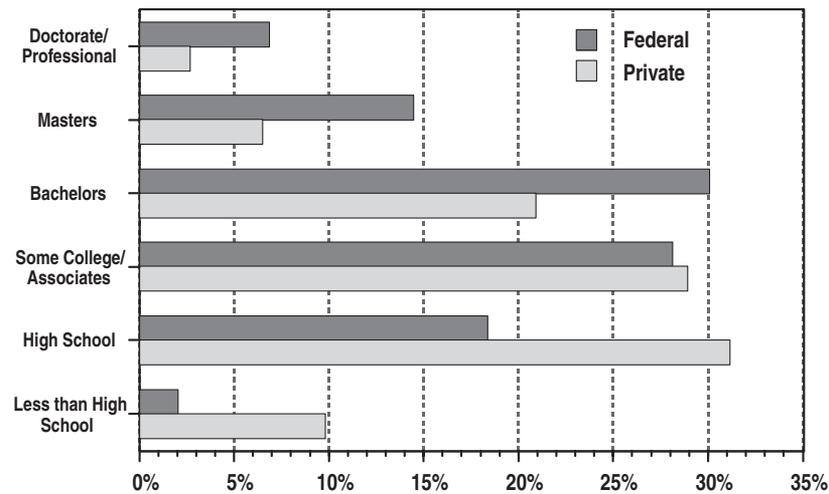
**Demographic characteristics.** Federal workers tend to have demographic characteristics associated with higher pay in the private sector. They are more experienced, older and live in higher cost metropolitan areas. For example, 22 percent of Federal workers are 55 or older – up from 15 percent 10 years ago and significantly

more than the 18 percent in the private sector. Chart 11-4 shows the difference in age distribution between Federal and private sector workers.

### Challenges

With the backdrop of tightening fiscal constraints, the Federal Government faces specific human capital challenges, including an aging and retiring workforce and a personnel system that requires further modernization. If the Government loses top talent, experience, and institutional memory through retirements, but cannot recruit, retain, and train highly qualified workers, Government performance suffers. While the age distribution and potential for a large number of retiring workers poses a challenge, it also creates an opportunity to streamline the workforce and to infuse it with new – and in some cases lower-cost – workers excited about Government service

**Chart 11-3. Education Level Distribution in Federal vs. Private Workforce**



Source: 2007-2011 Current Population Survey.

Notes: Federal workers exclude the military and Postal Service, but include all other Federal workers in the Executive, Legislative, and Judicial Branches. However, the vast majority of these employees are civil servants in the Executive Branch. Private sector workers exclude the self-employed. Neither category includes state and local government workers. This analysis is limited to full-time, full-year workers, i.e. those with at least 1,500 hours of work.

and equipped with strong technology skills, problem-solving ability, and fresh perspectives to tackle problems that Government must address.

To address issues in the long-term, Federal managers and employees need to rely on a modernized personnel system. To that end, the Administration proposed to the Joint Select Committee on Deficit Reduction that the Congress establish a Commission on Federal Public Service Reform comprised of Members of Congress, representatives from the President's National Council on Federal Labor-Management Relations, members of the private sector, and academic experts. The Commission would develop recommendations on reforms to modernize Federal personnel policies and practices within fiscal constraints, including, but not limited to compensation, staff development and mobility, and personnel performance and motivation.

This section discusses two major Federal workforce challenges, and the following section describes actions this Administration is taking to address those challenges.

### ***Aging Workforce***

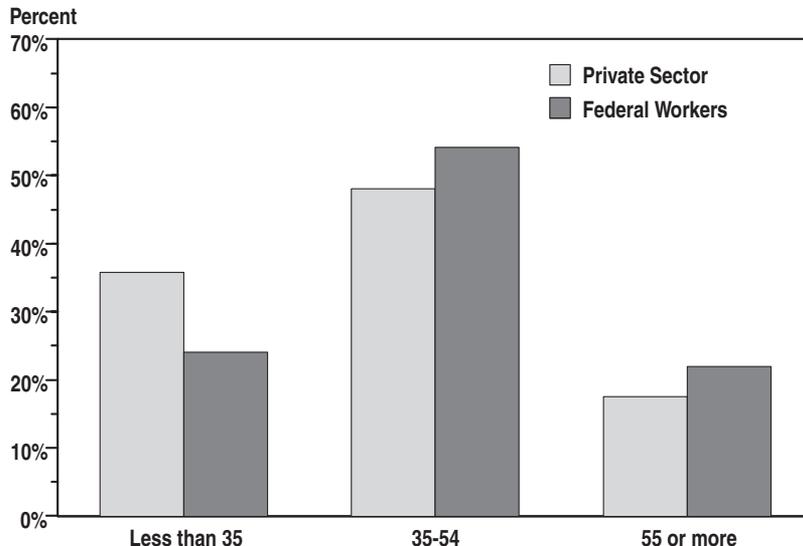
As discussed above, the Federal workforce of 2011 is older than Federal workforces of past decades and older than the private sector workforce. The number of Federal retirements is on a slow and steady increase, rising from 95,425 in 2009 to 96,133 in 2010 and 98,731 in 2011.

Given these demographics, the Federal Government faces two immediate challenges: preparing for retirements to maximize knowledge transfer from one generation to the next, and hiring and developing the next gen-

eration of the Government workforce to accomplish the varied and challenging missions the Federal Government must deliver.

### ***Developing and Engaging Personnel to Improve Performance***

One well-documented challenge in any organization is managing a workforce so it is engaged, innovative, and committed to continuous improvement, while at the same time dealing with poor performers who fail to improve as needed. Federal employees are generally positive about the importance of their work and express a high readiness to put in extra effort to accomplish the goals of their agencies. Results from the Federal Employee Viewpoint Survey (EVS) indicate 92 percent of respondents answer positively to the statement "The work I do is important." and nearly 97 percent of respondents answer positively to the statement "When needed I am willing to put in the extra effort to get a job done." However in contrast, Federal employees have repeatedly identified the inability to deal with poor performers as an area of weakness over the past 10 years. In 2011, only 31 percent of employees sampled in the EVS answered positively that "In my work unit, steps are taken to deal with a poor performer who cannot or will not improve." In addition, only 41 percent agreed that "creativity and innovation are rewarded". Over the past year, the Office of Personnel Management (OPM) and the Office of Management and Budget (OMB) have jointly met with agencies to review agency progress on their action plans to address weaknesses identified through the EVS.

**Chart 11-4. Federal vs. Private Age Distribution**

Source: 2011 Current Population Survey (covering calendar year 2010).  
 Notes: Federal workers exclude the military and Postal Service, but include all other Federal workers in the Executive Branch. Private sector workers exclude the self-employed. Neither category includes state and local government workers. This analysis is limited to full-time, full-year workers, i.e. those with at least 1,500 annual hours of work.

### **Progress Improving Employee Performance and Human Capital Management**

The Administration has made considerable progress improving employee performance and human capital management through multiple efforts, including: strengthened labor-management partnerships, better alignment between employee performance and organizational performance objectives, increased agency use of personnel data for decision-making, better hiring practices, heightened attention to a diverse and inclusive workforce, and a new Senior Executive Service (SES) performance appraisal system.

#### ***Strengthening Labor-Management Relations***

On December 9, 2009, the President issued Executive Order 13522 “Creating Labor-Management Forums to Improve the Delivery of Government Services”. Cooperative labor-management forums have been formed across the Federal Government to resolve workplace issues and improve mission performance and service delivery to the American public. The Administration developed guidelines to help each forum define its objectives and measure results along three dimensions: mission accomplishment, employee perceptions, and labor-management relations. Training opportunities have been provided to support these efforts. For example, VA and the Federal Labor Relations Authority made web-based training available at no cost across the Executive Branch.

In addition, a working group of the National Council on Federal Labor-Management Relations partnered with members of the Chief Human Capital Officers Council to recommend a new employee performance manage-

ment framework, referred to as the Goals-Engagement-Accountability-Results framework. Elements of this framework are now being tested by several pilot agencies, including VA, OPM, the Coast Guard, the Department of Housing and Urban Development, and the Department of Energy.

#### ***Developing and Using Personnel Analytics***

The Administration is committed to strengthening Federal agencies’ capacity to analyze human resources data to address workplace problems, improve productivity, and cut costs. The Federal Government began annual administration of the EVS in 2010 to make it more useful as a managerial tool to help agencies identify areas of personnel management strength and weakness. In 2011, to enhance its value, the survey was administered in a way that provided more managers with EVS information specific to their organizational unit. In 2012, OPM will survey all permanent civilian employees, rather than sampling as it did in 2011, to increase further agencies’ ability to pinpoint areas of strength and weakness. In addition, Performance.gov provides agencies and the public a window on key human resources data – including Government-wide and agency-specific hiring times, applicant and manager satisfaction, employee engagement and retention, diversity and disability, and veterans hiring and employment.

#### ***Building a Workforce with the Skills Necessary to Meet Agency Missions***

The demands of the workplace necessitate new and evolving skill sets in the workforce of the Federal Government. The Government Accountability Office has

identified critical employee skills gaps as an area of high risk. As a result, the Administration has established a Cross-Agency Priority Goal in this area and OPM will lead the multiagency effort to close critical skills gaps across the Federal Government. OPM and the Chief Human Capital Officers Council will develop and implement a Government-wide plan to achieve this goal.

This effort will build on progress already being made closing critical skills gaps in acquisition and information technology (IT). Spending on Federal contracts nearly doubled between 2001 and 2008, while the acquisition workforce responsible for negotiating, awarding, and managing these contracts remained essentially flat. While private sector contractors provide a wide range of services to help Federal employees carry out agency missions and operations, such as scientific research, IT support, and construction services, the lag in building a skilled acquisition workforce that kept pace with contracting requirements contributed to ineffective and wasteful contracting practices and imbalances in our relationship with contractors. Over the past three years, this Administration has worked to reverse this trend and restore accountability and fiscal responsibility. Through a focus on building the capacity and capability of the acquisition workforce and other key initiatives, the Federal Government reduced spending in Government contracting in 2010 for the first time in 13 years, reduced the use of many high-risk contracting practices, and made other significant improvements to the Federal contracting process. Continuing these and other efforts to increase efficiencies in Federal contracting -- while achieving further savings through the Campaign to Cut Waste -- depends on a strong, well-trained acquisition workforce, and the Administration continues to undertake the human capital planning and actions needed to improve Federal contracting.

The Administration is also committed to building a more efficient and effective 21<sup>st</sup> Century Government for the American people through the strategic use of IT, and strengthening the IT workforce is a key element in its plan to reform Federal IT management. To ensure we have experienced and talented managers to oversee large, complex IT investments and maximize the return on taxpayer dollars at every step in the process, the Administration created a new role for IT program managers with rigorous requirements. In addition, the Presidential Technology

Fellows Program was launched to reduce the barriers to entering public service and to provide highly talented technology professionals access to unique career opportunities in a variety of Federal agencies. The Entrepreneur-in-Residence program was also initiated, which enables the Government to capitalize on subject matter experts across various communities to bring innovative practices and technologies into the Government.

### ***A Diverse and Inclusive Workforce***

The American people are best served by a Federal workforce that reflects the rich diversity of the populace and encourages collaboration, fairness, and innovation. Pursuant to the President's Executive Order 13583, signed in August 2011, the first Government-wide Diversity and Inclusion Strategic Plan was issued and provides agencies with the shared goals of workforce diversity, workplace inclusion, and sustainability. The Strategic Plan efforts will focus on outreach, recruitment, and career development to draw from all segments of society, including those who are underrepresented, as well as on the retention, inclusion, and leadership development of all Federal employees.

### ***New Senior Executive Service Performance Appraisal System***

In January 2012, OPM and OMB issued a standard Government-wide SES performance appraisal system to meet the SES performance management needs of all agencies and their SES employees. An interagency work group developed this system after examining a number of current SES performance management systems at several agencies and benchmarking with the private sector through the President's Management Advisory Board, a group of private sector leaders that advise the Government on management best practices. The new system will provide a consistent and uniform framework for agencies to communicate expectations and evaluate the performance of SES members, particularly centering on the role and responsibility of SES employees to provide executive leadership. The new system will also provide the necessary flexibility and enable appropriate customization. Agencies will have the opportunity to transition to this new system over the next year or two as their current system certifications expire, or earlier if desired.

**Table 11-2. FEDERAL CIVILIAN EMPLOYMENT IN THE EXECUTIVE BRANCH**  
(Civilian employment as measured by FTEs in thousands, excluding the Postal Service)

Agency	Actual		Estimate		Change: 2012 to 2013	
	2010	2011	2012	2013	FTE	Percent
<b>Cabinet agencies:</b>						
Agriculture .....	96.3	95.9	93.3	92.3	-1.0	-1.1%
Commerce .....	123.3	41.3	40.5	42.0	1.5	3.7%
Defense .....	741.4	771.3	764.3	756.8	-7.5	-1.0%
Education .....	4.1	4.4	4.3	4.3	0.0	0.0%
Energy .....	16.1	16.1	16.5	16.4	-0.1	-0.6%
Health and Human Services .....	66.1	68.8	70.1	71.5	1.4	2.0%
Homeland Security .....	173.0	179.5	187.5	188.9	1.4	0.7%
Housing and Urban Development .....	9.5	9.5	9.4	9.4	0.0	0.0%
Interior .....	70.9	70.5	70.4	69.8	-0.6	-0.9%
Justice .....	113.4	116.3	117.9	118.6	0.7	0.6%
Labor .....	16.9	16.9	17.4	17.4	0.0	0.0%
State .....	31.6	32.4	32.4	32.5	0.1	0.3%
Transportation .....	57.2	57.4	57.7	57.9	0.2	0.3%
Treasury .....	111.9	110.7	108.2	111.8	3.6	3.3%
Veterans Affairs .....	284.8	295.7	302.3	306.6	4.3	1.4%
<b>Other agencies—excluding Postal Service:</b>						
Broadcasting Board of Governors .....	1.9	1.9	2.0	1.9	-0.1	-5.0%
Corps of Engineers—Civil Works .....	23.6	23.7	23.0	22.7	-0.3	-1.3%
Environmental Protection Agency .....	17.2	17.3	17.1	17.1	0.0	0.0%
Equal Employment Opportunity Comm .....	2.4	2.5	2.4	2.4	0.0	0.0%
Federal Deposit Insurance Corporation .....	7.1	8.3	8.7	8.4	-0.3	-3.4%
General Services Administration .....	12.5	12.7	13.2	13.0	-0.2	-1.5%
International Assistance Programs .....	4.9	5.2	5.4	5.4	0.0	0.0%
National Aeronautics and Space Admin .....	18.4	18.6	18.4	18.2	-0.2	-1.1%
National Archives and Records Admin .....	3.2	3.3	3.3	3.3	0.0	0.0%
National Labor Relations Board .....	1.6	1.7	1.7	1.7	0.0	0.0%
National Science Foundation .....	1.4	1.4	1.4	1.5	0.1	7.1%
Nuclear Regulatory Commission .....	4.0	4.0	4.0	3.9	-0.1	-2.5%
Office of Personnel Management .....	4.8	5.4	5.7	5.3	-0.4	-7.0%
Railroad Retirement Board .....	1.0	1.0	1.0	0.9	-0.1	-10.0%
Securities and Exchange Commission .....	3.7	3.8	3.9	4.5	0.6	15.4%
Small Business Administration .....	3.4	3.4	3.4	3.4	0.0	0.0%
Smithsonian Institution .....	5.1	5.2	5.2	5.2	0.0	0.0%
Social Security Administration .....	67.3	67.6	65.4	63.4	-2.0	-3.1%
Tennessee Valley Authority .....	12.0	12.4	12.8	12.9	0.1	0.8%
All other small agencies <sup>1</sup> .....	15.9	16.3	17.7	18.7	1.0	5.6%
<b>Total, Executive Branch civilian employment <sup>2</sup> ...</b>	<b>2,127.9</b>	<b>2,102.4</b>	<b>2,107.6</b>	<b>2,110.0</b>	<b>2.4</b>	<b>0.1%</b>
Security FTE per P.L. 112-25 .....	1,241.7	1,290.1	1,297.9	1,296.3	-1.6	-0.1%
Nonsecurity FTE .....	886.2	812.3	809.7	813.7	4.0	0.5%

<sup>1</sup> FTE increases in the Consumer Financial Protection Bureau and the Commodity Futures Trading Commission comprise 70% of the increase between 2012 and 2013.

<sup>2</sup> Totals may not add due to rounding.

**Table 11-3. TOTAL FEDERAL EMPLOYMENT**  
(As measured by FTEs)

Description	2011 Actual	Estimate		Change: 2012 to 2013	
		2012	2013	FTE	Percent
Executive branch civilian personnel:					
Subtotal, excluding Postal Service .....	2,102,369	2,107,586	2,110,012	2,426	0.1%
Postal Service <sup>1</sup> .....	603,070	579,069	574,142	-4,927	-0.9%
Subtotal, Executive Branch civilian personnel .....	2,705,439	2,686,655	2,684,154	-2,501	-0.1%
Executive branch uniformed military personnel:					
Department of Defense <sup>2</sup> .....	1,534,424	1,499,930	1,466,664	-33,266	-2.2%
Department of Homeland Security (USCG) .....	42,429	43,088	42,540	-548	-1.3%
Commissioned Corps (DOC, EPA, HHS) .....	6,821	6,845	6,845	0	0.0%
Subtotal, uniformed military personnel .....	1,583,674	1,549,863	1,516,049	-33,814	-2.2%
Subtotal, Executive Branch .....	4,289,113	4,236,518	4,200,203	-36,315	-0.9%
Legislative Branch <sup>3</sup> .....	31,684	34,685	34,515	-170	-0.5%
Judicial Branch .....	35,381	34,914	35,164	250	0.7%
<b>Grand total</b> .....	<b>4,356,178</b>	<b>4,306,117</b>	<b>4,269,882</b>	<b>-36,235</b>	<b>-0.8%</b>

<sup>1</sup> Includes Postal Rate Commission.

<sup>2</sup> Includes activated Guard and Reserve members on active duty. Does not include Full-Time Support (Active Guard & Reserve (AGRs)) paid from Reserve Component appropriations.

<sup>3</sup> FTE data not available for the Senate (positions filled were used).

**Table 11-4. PERSONNEL COMPENSATION AND BENEFITS**  
(In millions of dollars)

Description	2011 Actual	2012 Estimate	2013 Request	Change: 2012 to 2013	
				Dollars	Percent
<b>Civilian personnel costs:</b>					
Executive Branch (excluding Postal Service):					
Direct compensation .....	175,931	177,035	179,942	2,907	1.6%
Personnel benefits .....	63,919	64,495	65,816	1,321	2.0%
Subtotal, Executive Branch .....	239,850	241,530	245,758	4,228	1.8%
Postal Service:					
Direct compensation .....	37,495	35,691	30,003	-5,688	-15.9%
Personnel benefits .....	15,126	8,697	11,711	3,014	34.7%
Subtotal .....	52,621	44,388	41,714	-2,674	-6.0%
Legislative Branch: <sup>1</sup>					
Direct compensation .....	2,154	2,110	2,132	22	1.0%
Personnel benefits .....	653	647	663	16	2.5%
Subtotal .....	2,807	2,757	2,795	38	1.4%
Judicial Branch:					
Direct compensation .....	3,226	3,206	3,249	43	1.3%
Personnel benefits .....	1,067	1,081	1,105	24	2.2%
Subtotal .....	4,293	4,287	4,354	67	1.6%
Total, civilian personnel costs .....	299,571	292,962	294,621	1,659	0.6%
<b>Military personnel costs:</b>					
Department of Defense					
Direct compensation .....	78,828	78,023	78,270	247	0.3%
Personnel benefits .....	50,940	51,346	48,163	-3,183	-6.2%
Subtotal .....	129,768	129,369	126,433	-2,936	-2.3%
All other executive branch, uniformed personnel:					
Direct compensation .....	2,455	2,506	2,721	215	8.6%
Personnel benefits .....	792	822	763	-59	-7.2%
Subtotal .....	3,247	3,328	3,484	156	4.7%
Total, military personnel costs <sup>2</sup> .....	133,015	132,697	129,917	-2,780	-2.1%
<b>Grand total, personnel costs .....</b>	<b>432,586</b>	<b>425,659</b>	<b>424,538</b>	<b>-1,121</b>	<b>-0.3%</b>
<b>ADDENDUM</b>					
<b>Former Civilian Personnel:</b>					
Retired pay for former personnel					
Government payment for Annuitants: .....	71,983	81,820	85,231	3,411	4.2%
Employee health benefits .....	10,260	10,475	11,027	552	5.3%
Employee life insurance .....	45	45	45	0	0.0%
<b>Former military personnel:</b>					
Retired pay for former personnel .....	50,997	52,685	54,759	2,074	3.9%
Military annuitants health benefits .....	8,756	9,471	9,727	256	2.7%

<sup>1</sup> Excludes members and officers of the Senate.

<sup>2</sup> Amounts in this table for military compensation reflect direct pay and benefits for all servicemembers, including active duty, guard, and reserve members.