

HOLD UNTIL RELEASED  
BY THE COMMITTEE

**Statement of**  
**Dr. Dorothy Robyn**  
**Deputy Under Secretary Of Defense**  
**(Installations and Environment)**

**Before the House Armed Services Committee**  
**Subcommittee on Readiness**

**March 18, 2010**

Chairman Ortiz, Representative Forbes and distinguished members of the subcommittee: thank you for the opportunity to present the President's Fiscal Year 2011 budget request for the Department of Defense programs that support installations and the environment.

Installations are the military's infrastructure backbone—the platform from which our soldiers, sailors, airmen and marines accomplish their missions. Installations have long supported the maintenance and deployment of weapons systems and the training and mobilization of combat forces. Increasingly, they have an even more direct link to combat operations, by providing “reachback” support. For example, we operate Predator drones in Afghanistan from a facility in Nevada and analyze battlefield intelligence at data centers in the United States. Our installations are also becoming more important as a staging platform for homeland defense missions.

Installations affect not just our mission effectiveness but the very quality of life that our service members and their families enjoy. Families' satisfaction with the most critical services they receive—housing, healthcare, childcare, on-base education—is linked to the quality and condition of our buildings and facilities.

The Department must manage its installations—the natural as well as the built environment—efficiently and effectively. This is a major challenge. The Department's 507 permanent installations comprise more than 300,000 buildings and 200,000 other structures—everything from bridges to flagpoles—and have an estimated replacement value of more than \$800 billion. These installations are located on some 5,000 sites and occupy 28 million acres of land here in the United States and overseas. These lands are home to archaeological and sacred sites, old-growth forests, and more than 300 threatened and endangered species.

My testimony today addresses the three topics that most directly affect our installation assets: first, international and domestic basing decisions, including the buildup of Marines in Guam and the 2005 Base Realignment and Closure process; two, the Department's management of the built environment, including the programs that support military construction, family housing, sustainment and recapitalization, and energy efficiency; and three, our efforts to protect the natural environment.

## **I. THE GLOBAL PICTURE: INTERNATIONAL AND DOMESTIC BASING**

### **Global Basing**

To project power globally, the Department must have the right mix of military forces and facility infrastructure at strategic locations. We are undergoing a global re-stationing, both to strengthen our forward military presence and to transform overseas

legacy forces, Cold War basing structures and host-nation relationships into a flexible network of capabilities to which we and our allies and partners have shared access.

My office works closely with the Joint Staff and other Defense organizations to ensure that our overseas base structure supports the needed range of strategic missions across all theaters. While our work on overseas basing has traditionally focused primarily on the cost and engineering aspects of military construction and sustainment/recapitalization, we have recently taken on a broader role in support of emerging global posture initiatives: increasingly, we provide analytic input to strategic discussions, by evaluating existing infrastructure capacity relative to emerging mission requirements.

Our goal is to ensure that decisions reflect joint planning and rigorous analysis that integrates requirements across all of the Services. Current focus areas include: providing guidance and monitoring in support of the Army's consolidation of command and control activities in Weisbaden, Germany; analysis and evaluation of options for full recapitalization of the Landstuhl Regional Medical Center in Germany; and analysis and support for efforts to relocate more than 8,000 Marines and their dependents from Okinawa to Guam.

### ***Rebasing Marines from Okinawa to Guam***

The realignment of Marines from Okinawa to Guam, which is perhaps the most significant change in our force posture in Asia in decades, will further several strategic goals. First, it will strengthen our alliance with Japan by resolving long-standing problems with our presence in Okinawa. Second, it will ensure the continued long-term presence of U.S. forces in Japan and in the Western Pacific. Third, by making better use of Guam's strategic advantages, this realignment will more effectively array U.S. forces for the complex and evolving security environment in Asia.

The political situation in Japan remains extremely delicate and the stakes are high. The U.S. Government is unlikely to get another opportunity to craft a strategic realignment that not only enhances our regional force posture but also incorporates more than \$6 billion of Japanese financing. The Government of Japan has undergone a transition with the creation of the Democratic Party of Japan (DPJ)-led government in September 2009. The DPJ leadership, working with coalition partners, has initiated a process to review the Realignment Roadmap before endorsing the agreement in full, which is expected to happen in May 2010. The U.S. government remains committed to successful implementation of the Realignment Roadmap because it provides a needed solution to critical strategic challenges to the long-term presence of U.S. military capabilities in Japan and the Asia-Pacific region.

The FY 2011 President's Budget request includes \$452 million to support the relocation of Marines from Okinawa to Guam. This includes projects to upgrade the wharf, provide utilities, ramp and roadway improvements, and carry out site preparation and utilities construction for the Marines' main cantonment area. These projects will yield long-term benefits for all the military forces on Guam. They will also demonstrate the Department's commitment to working with the Governor of Guam, whose strong support for the relocation can have a significant impact on Guam's population.

In support of the relocation, the Department released the Draft Environmental Impact Statement (DEIS) on November 20, 2009, for public review. In addition to the analysis for rebasing of the Marines, the DEIS also includes analysis for construction of a new deep-draft wharf with shore-side infrastructure to support a transient nuclear-powered aircraft carrier, and facilities and infrastructure to support establishment and operation of an Army Missile Defense Task Force. The public comment period for the DEIS ended February 17, 2010. The Department is working with the Council on Environmental Quality, the Environmental Protection Agency, and other resource agencies to address the concerns that were raised by the federal agencies and the public.

To address challenges regarding the realignment and to provide the appropriate oversight, the Department last year established the Guam Oversight Council (GOC), chaired by the Deputy Secretary of Defense. The GOC meets regularly to validate requirements, identify and resolve issues, provide resource guidance and clarify governance structures. Initial challenges taken up by the GOC include the aggressive timeline for completion of the realignment of Marines from Okinawa to Guam; safety of the Futenma Replacement Facility in Okinawa; adequacy of training in the Pacific; strategic, operational, and logistic implications of posture changes in the Pacific; and successful partnership with the Government of Guam.

### **Domestic Basing: Base Realignment and Closure**

Turning to domestic basing, we are entering our sixth and final year of implementation of BRAC 2005, the largest BRAC round undertaken by the Department. BRAC 2005 has been a significant engine for the recapitalization of our enduring military facilities. By the end date (September 15, 2011), the Department will have invested \$24.7 billion in military construction to enhance capabilities and another \$10.4 billion to move personnel and equipment, outfit facilities, and carry out environmental clean-up. These investments will generate nearly \$4 billion in annual savings beginning in FY 2012. The DoD components have implemented BRAC 2005 conscientiously and transparently, according to a well-defined process. The Department continues to monitor the process closely to ensure that we are meeting our legal obligations. To date, 28 BRAC 2005 recommendations have been certified as completed.

The FY 2011 President’s Budget includes \$2.4 billion for BRAC 2005, which fully funds the investments needed to complete implementation. This represents a \$5.1 billion decrease from the FY 2010 enacted level for BRAC 2005. The reduction in funding is due primarily to a decrease in construction projects as we near the September 2011 completion date. To support continued property disposal actions at Prior-BRAC round sites, the FY 2011 budget request includes \$360.5 million, a decrease of \$136 million from the FY 2010 enacted level.

**Comparison of Base Realignment and Closure Funding**

(\$ Millions)	<b>FY 2010 Enacted</b>	<b>FY 2011 Requested</b>
Base Realignment and Closure IV	496.7	360.5
Base Realignment and Closure 2005	7,455.5	2,354.3
<b>TOTAL</b>	<b>7,952.2</b>	<b>2,714.8</b>

Despite our progress and the significant investment we have made, the Department has been perceived as ignoring the impacts of its actions, particularly in some communities that are experiencing significant growth as a result of BRAC 2005 consolidation. One area where growth can have an adverse impact is local transportation. Transportation impacts have been and will continue to be mitigated through the application of our authority and funding under the Defense Access Road (DAR) program. The criteria used to determine whether a project qualifies under DAR are limited, however. In particular, they may not adequately address the scenario in which a defense action causes a significant increase in traffic congestion, as may occur in one or more cases as a result of BRAC 2005 consolidation.

To address this and related issues, the National Academy of Sciences is undertaking a study of BRAC Transportation Improvements as required by the FY 2010 Military Construction and Veterans Affairs and Related Agencies Consolidated Appropriations. A panel of outside experts named by the National Academy’s Transportation Research Board will evaluate the DAR criteria and assess the funding of transportation improvements associated with BRAC 2005. We hope to receive an interim report in May.

One of the most important initiatives with a basis in BRAC 2005 is the consolidation and realignment of medical care delivery in the National Capitol Region (NCR), with its focus on transforming medical care through a joint delivery system. As I recently testified, this extraordinarily complex undertaking will deliver major benefits that would not have been possible without BRAC. Its successful completion is dependent on the strict discipline that the BRAC process provides. The construction now underway represents a balanced and reasonable approach to combining the functions of the old Walter Reed Army Medical Center into the new National Military Medical Center at

Bethesda, Maryland. The result will be a medical delivery platform far superior to what we have now—and one on which we can continue to build.

Another BRAC 2005 action that my office has championed is the consolidation of 26 installations into 12 joint bases. At each joint base, a *supporting* Service Component provides installation leadership for one or more *supported* Service Components. By consolidating installation management and delivery of installation support, joint bases will be able to provide more efficient and effective support for the overall military mission.

Our joint bases represent realigned, reconfigured national military assets for the joint teams they serve. The first five joint bases reached full operational capability on October 1, 2009. The remaining seven joint bases reached initial operational capability on January 31, 2010, and are on their way to full operational capability this coming October. We are no longer implementing joint basing. We are now operating joint bases.

I had the opportunity to meet personally with most of the joint base commanders in January, and I am encouraged by their can-do spirit and dedication to providing excellent installation support to the joint teams at each base. Additionally, I have had the opportunity to tour two of our joint bases recently: Joint Region Marianas on Guam and Joint Expeditionary Base Little Creek-Ft. Story in Virginia. Having seen firsthand the extraordinary work they are doing, I have confidence that our joint base commanders will achieve efficiencies and other benefits as their installation support organizations mature.

## II. MANAGING OUR BUILT ENVIRONMENT

The FY 2011 Military Construction (MilCon) and Family Housing appropriations request totals more than \$18.7 billion, a decrease of approximately \$4.6 billion from the FY 2010 enacted level. This decrease primarily reflects the decline in the level of investment needed for BRAC 2005 as we approach the statutory deadline for completion (September 2011). This budget request will allow the Department to respond rapidly to warfighter requirements, enhance mission readiness and provide essential services for its personnel and their families.

### Comparison of Military Construction and Family Housing

(\$ Millions)	<b>FY 2010 Enacted</b>	<b>FY 2011 Requested</b>
Military Construction	12,545.8	13,705.7
Base Realignment and Closure IV	496.7	360.5
Base Realignment and Closure 2005	7,455.5	2,354.3
Family Housing Construction/Improvements	488.8	356.8

Family Housing Operations & Maintenance	1,444.1	1,448.7
Chemical Demilitarization	151.5	125.0
Family Housing Improvement Fund	2.6	1.1
Energy Conservation Investment Program	174.2	120.0
NATO Security Investment Program	197.4	258.9
Homeowners Assistance Program	323.2	16.5
<b>TOTAL</b>	<b>23,279.8</b>	<b>18,747.5</b>

## **Military Construction**

Our request for “pure” military construction (i.e., exclusive of BRAC and Family Housing) is \$13.7 billion. This is a \$1.2 billion increase over last year’s enacted level (\$12.5 billion). Let me highlight three areas where we focus our FY 2011 MilCon budget request.

First and most important, the budget request supports operational mission requirements. MilCon is key to initiatives such as Grow the Force and Global Defense Posture realignment, which require the synchronized movement of troops and equipment, as well as to the fielding of modernized and transformational weapon systems. Our budget request includes training and support facilities to accommodate the increases in the Army and Marine Corps endstrength; initial funding for the new and improved infrastructure needed to relocate 8,000 Marines and their dependents from Okinawa to Guam; support for the bed down of the Joint Strike Fighter; improved and expanded communications and intelligence capabilities for Special Operations Forces; and fuel distribution facilities for the Defense Logistics Agency.

Second, the President’s budget request initiates a major recapitalization of our DoD-dependent schools here in the United States and overseas. Fully 134 of the 192 DoD-dependent schools are in poor or failing physical condition—the result of longstanding underinvestment by the Department. Many of these schools have simply lasted beyond their expected service life. Others are improperly configured, lacking in essential capabilities, or reliant on temporary structures. The FY 2011 budget request includes \$439 million to repair or replace ten of these schools. This represents the first phase of a 5-year plan to recapitalize all 134 inadequate schools.

Third, the FY 2011 budget request includes more than \$1 billion to upgrade our medical infrastructure. By modernizing our hospitals and related facilities, we can improve healthcare delivery for our service members and their families, and enhance our efforts to recruit and retain personnel. The FY 2011 request provides funds for our top two priorities: the replacement of the Naval Hospital in Guam and the Ambulatory Care Center at Lackland Air Force Base, Texas. It also allows us to continue improving the chemical/biological defense facilities that are conducting such vital work.

## *Overseas Contingency Operations*

Military construction serves as a key enabler in Overseas Contingency Operations (OCO), by providing the facilities that directly support military activity. Our FY 2011 budget request includes \$1.3 billion for MilCon necessary to support the new strategy for counterinsurgency and increased force levels for ongoing OCO in the U.S. Central Command's area of responsibility. Specifically, our FY 2011 budget request expands the logistical and facilities backbone needed to increase our operational capability, replaces expeditionary facilities at the end of their lifecycle, consolidates functions and facilities, and supports Special Operations Forces. These additional operational facilities will provide support for tactical airlift; airborne intelligence, surveillance and reconnaissance; and additional fuel, storage, and cargo handling and distribution capability at critical locations. The request also provides for replacement of temporary housing, dining facilities and other basic infrastructure.

## **Family Housing and Barracks**

Housing is key to quality of life—in the military no less than in the civilian world. The FY 2011 President's Budget request includes \$1.8 billion for Family Housing. This is a decrease of \$436 million from the FY 2010 enacted level, which largely reflects the maturation of our Military Housing Privatization Initiative. Our request provides for the continued reduction of inadequate units; for operations and maintenance of government-owned housing; and for the privatization of more than 500 family housing units, most of them to support the Department's Grow the Force initiative.

The Services have increasingly relied on privatization to address the oftentimes poor condition of military-owned housing and the shortage of affordable private rental housing available to military families. In my view, housing privatization is the single most effective reform my office has carried out.

Privatization allows the Military Services to partner with the private sector to generate housing built to market standards. It is extremely cost effective. To date, the Military Services have leveraged DoD housing dollars by a factor of 10 to 1: \$2.7 billion in federal investments have generated \$27 billion in privatized housing development at Defense installations. The privatized housing is also of high quality and often more appealing to young families than what the military construction process would produce. Moreover, the private owners have an incentive to maintain quality because they are responsible for maintenance and operation, including necessary recapitalization, during the full 50 years of the contract.

### Comparison of Family Housing

(\$ Millions)	<b>FY 2010 Enacted</b>	<b>FY 2011 Requested</b>
Family Housing Construction/Improvements	488.7	356.8
Family Housing Operations & Maintenance	1,444.0	1,449.0
Family Housing Improvement Fund	2.6	1.1
Homeowners Assistance Program	323.0	16.0
<b>TOTAL</b>	<b>2,258.3</b>	<b>1,822.9</b>

The FY 2011 President's Budget request also includes funding to reduce inadequate (non-privatized) family housing in the United States and at enduring locations overseas. The budget includes \$34 million for the Army to construct 64 family housing units in Baumholder, Germany, and \$37 million for the Navy to replace 71 units at Naval Station Guantanamo Bay, Cuba.

The Department is committed to improving housing for its unaccompanied Service members, not just its families. The FY 2011 President's Budget includes \$2.3 billion for 57 construction and renovation projects that will improve living conditions for approximately 17,000 unaccompanied personnel. The Army has also used its privatization authorities to improve unaccompanied housing. Bachelor officer quarters and senior enlisted bachelor quarters have been added to existing family housing privatization projects at Fort Bragg, North Carolina; Fort Stewart, Georgia; Fort Drum, New York; and Fort Irwin, California. A fifth project is planned soon at Fort Bliss, Texas.

The Navy, too, has used privatization as a tool to improve unaccompanied housing—specifically by bringing shipboard junior enlisted sailors ashore using a special pilot authority in the FY 2003 National Defense Authorization Act (10 USC 2881a). The first pilot project was awarded in December 2006 at San Diego, California, and the second was awarded in December 2007 at Hampton Roads, Virginia. Both projects have demonstrated that, with authority to provide partial Basic Allowance for Housing (BAH) to single service members, privatizing single, junior enlisted personnel housing is more cost effective than the traditional Government-owned barracks model.

#### ***Homeowners Assistance Program***

The Homeowners Assistance Program (HAP) represents a very different type of "housing" program but one no less important to the quality of life of those who qualify. Since 1966, HAP has provided financial assistance to military personnel and DoD civilians at locations where home values decreased as a result of Defense action. The FY 2011 President's Budget request includes \$17 million for HAP.

In February 2009, Congress provided \$555 million in the American Recovery and Reinvestment Act (Recovery Act) to expand HAP to address unique economic pressures faced by military personnel who are required to relocate during adverse housing market conditions. Congress added another \$300 million for HAP in the Consolidated Appropriations Act for 2010.

HAP seeks to minimize the amount of financial harm—including risk of foreclosure, credit damage or bankruptcy—that service member and civilian beneficiaries experience when they are compelled to move. As of March 3, 2010, HAP has assisted 771 homeowners at a program cost of \$84 million. Another 4,652 homeowners are currently eligible.

### **Facilities Sustainment and Recapitalization**

In addition to investing in new construction, we must maintain, repair, and recapitalize our existing facilities. The Department’s Sustainment and Recapitalization programs strive to keep our inventory of facilities in good working order and mission-capable. By providing a consistent level of quality in our facilities, we can raise the productivity of our personnel and improve their quality of life. The FY 2011 budget request includes \$9.0 billion for sustainment and \$4.6 billion for recapitalization (restoration and modernization) of our facilities.

#### **Comparison of Sustainment and Recapitalization**

(\$ Millions)	<b>FY 2010 Enacted</b>	<b>FY 2011 Requested</b>
Sustainment (O&M & MilPers)	8,251.0	9,042.0
Recapitalization (O&M, MilCon, MilPers, RDTE)	6,448.0	4,583.0
<b>TOTAL S &amp; RM</b>	<b>14,699.0</b>	<b>13,625.0</b>

Sustainment represents the Department’s single most important investment in the overall health of its inventory of facilities. Sustainment includes the regularly scheduled maintenance and repair or replacement of facility components—the periodic but predictable investments that should be made throughout the service life of a facility to slow its deterioration and optimize the owner’s investment. We use a Facilities Sustainment Model (FSM) based on industry benchmarks to estimate the annual cost of regularly scheduled maintenance and repair for different types of buildings. We then require the Military Departments and Components to fund sustainment of their facilities at a level equal to at least 90 percent of the FSM-generated estimate. Our FY 2011 budget request is consistent with that requirement.

The second key investment we make in the health of our facilities is recapitalization (restoration and modernization). Recapitalization serves to keep the inventory of facilities modern and relevant in an environment of changing missions and standards, to extend the service life of facilities, and to restore capability lost due to man-made or natural causes including inadequate sustainment. Compared with sustainment, recapitalization needs are much harder to forecast because they are often a function of change, such as a new functional standard for enlisted housing, the availability of new technology (e.g., improved technology for heating and cooling), or even a change in the very mission that the facility supports. The FY 2011 budget request (\$4.6 billion) is \$1.9 billion lower than the FY 2010 enacted level primarily because we are nearing the end of the BRAC 2005 process, which drove a significant amount of recapitalization.

In the past, the Department used a target recapitalization rate to establish an annual investment level for the entire building inventory. In recent years our goal was to recapitalize buildings every 67 years. However, this approach did not provide information on the condition of individual buildings—precisely the kind of information that one should use to guide decisions on specific investments.

Since 2006, the Federal Real Property Council (FRPC) has required federal agencies to rate the quality of individual facilities using a Facility Condition Index (FCI). This quality rating, expressed in terms of the relationship between what it would cost to replace a facility and what it would cost to repair it, allows us to identify those facilities in greatest need of investment. By this measure, 18 percent of the 539,000 facilities in the Department's inventory are in poor condition and another 7 percent are in failing condition.

Using the facility condition data that DoD is already collecting, my staff is developing a new methodology for determining the level of investment needed overall and the optimal method of targeting that investment. We will consider factors other than just the condition of the building—e.g., mission priority. The result will be a capital investment plan to eliminate facilities that are in poor and failing condition.

In addition to sustaining and recapitalizing our facilities, we are committed to eliminating facilities that we either no longer need or cannot repair economically. Demolition is an important tool in any recapitalization and will also play a role in our capital investment plans. The FY 2011 budget request includes more than \$200 million for this purpose.

### **III. MANAGING OUR ENERGY USE**

The recently released Quadrennial Defense Review (QDR) makes clear that crafting a strategic approach to energy and climate change is a high priority for the

Department. Although much of the focus has been on the energy we use in a combat setting (“operational energy”), the management of energy on our permanent installations (“facility energy”) is also extremely important. The Energy Conservation Investment Program (ECIP) is a key element of the Department’s facility energy strategy: ECIP supports energy efficiency and renewable energy projects based on payback and has achieved an estimated \$2.16 in savings for every dollar spent. The FY 2011 President’s budget requests \$120 million for ECIP. This is \$30 million above our FY 2010 request but less than the FY 2010 enacted amount (\$174 million).

To put ECIP in context, let me briefly discuss why facility energy management is so important and what we are doing to improve it.

The way we manage energy at our permanent installations is important for two key reasons. First, facilities energy represents a significant cost. In 2009, DoD spent \$3.8 billion to power its facilities—down from \$3.96 billion in 2008. This represents about 28 percent of the Department’s total energy costs (that fraction is higher in peacetime, when we are not consuming large amounts of operational energy). Moreover, energy needs for fixed installations in the United States will likely increase over the next several years as we “grow” the Army and the Marine Corps, reduce our presence in Iraq and Afghanistan, and continue to improve the quality of life for soldiers and their families—for example, by installing flat-panel TVs in individual rooms in a barracks that now has just one TV per common room.

Facilities energy is costly in other ways as well. Although fixed installations and non-tactical vehicles account for less than a third of DoD’s energy costs, they contribute nearly 40 percent of our greenhouse gas emissions. This reflects the fact that our installations rely on commercial electricity, which comes from fossil fuels—principally coal. Given that facilities energy as a share of total DoD energy will increase when we reduce our presence in Iraq and Afghanistan, fixed installations will likely become DoD’s major source of greenhouse gas emissions.

Second, installation energy management is key to mission assurance. According to the Defense Science Board, DoD’s reliance on a fragile commercial grid to deliver electricity to its installations places the continuity of critical missions at serious and growing risk.<sup>1</sup> Most installations lack the ability to manage their demand for and supply of electrical power and are thus vulnerable to intermittent and/or prolonged power disruption due to natural disasters, cyberattacks and sheer overload of the grid.

Over the last five years, the Department has steadily reduced energy consumption per square foot at our permanent installations, largely in response to statutory and

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<sup>1</sup> “More Fight-Less Fuel,” Report of the Defense Science Board Task Force on DoD Energy Strategy, February 2008.

regulatory goals. While continuing that very positive trend, it is time for us to adapt our approach to installation energy management from one that is primarily focused on compliance to one that is focused on long-term cost avoidance and mission assurance.

In the last year, the Department has made energy policy a significantly higher priority. First, Secretary Gates has expressed his strong support for the goal of reducing energy consumption, and the QDR reflects his desire for a more strategic approach to energy security. As one indication of this commitment, the Department recently announced that, under Executive Order 13514, it will reduce greenhouse gas emissions from non-combat activities—largely installations and non-tactical vehicles—by 34 percent by 2020. Since greenhouse gas pollution is due overwhelmingly to direct energy use, this aggressive target will require major gains in energy efficiency at our installations. Other key statutory and regulatory goals to achieve these gains include the following:

- Reduce energy intensity (BTUs per square foot) by 3 percent per year, or 30 percent overall, by 2015 from the 2003 baseline [Energy Independence and Security of 2007]. Under DoD's High Priority Performance Goals, the interim target is an 18 percent reduction by the end of 2011.
- Increase use of renewable energy to 7.5 percent in 2013 and beyond [Energy Policy Act of 2005, or EPACT]; and produce or procure 25 percent of all electric energy from renewable sources by the end of 2025 [National Defense Authorization Act of 2007, or NDAA]. Under DoD's High Priority Performance Goals, the interim NDAA target is 14.3 percent by 2011.
- Reduce consumption of petroleum (gasoline and diesel) by non-tactical vehicles by 30 percent by 2020 [Executive Order 13514, October 2009].
- Reduce water consumption intensity (gallons/square foot) by 2 percent annually through fiscal year 2020, or 26 percent overall, from the 2007 baseline [Executive Order 13514, October 2009].

Second, the Department is investing more to improve the energy profile of our fixed installations. Financing for these investments has come from annually appropriated funds, including military construction, operations and maintenance, and ECIP. We have utilized third-party financing through Energy Savings Performance Contracts and Utilities Energy Service Contracts. We are also pursuing other innovative financing mechanisms, such as Enhanced Use Leases and Power Purchase Agreements.

Our basic investment strategy is twofold: 1) reduce the demand for traditional energy through conservation and energy efficiency; and 2) increase the supply of

renewable and other alternative energy sources. Investments that curb demand are the most cost-effective way to improve an installation's energy profile. As Department of Energy Secretary Steven Chu has observed, "Energy efficiency is not just the low hanging fruit; it's the fruit lying on the ground."

A large percentage of our demand-side (energy efficiency) investments are expended on projects to retrofit existing buildings. The Department spends almost \$10 billion a year to sustain, restore, and modernize our facilities. About one-sixth (\$1.7 billion) of this is spent on projects designed directly to improve energy efficiency. Typical projects install improved lighting, high-efficiency HVAC systems, double-pane windows, energy management control systems, and new roofs. As we replace major components and subsystems in our buildings, the newer, more energy-efficient systems contribute to DoD's overall energy reduction goals.

In addition to retrofitting existing buildings, we are taking advantage of new construction to incorporate more energy-efficient designs, material and equipment into our inventory of facilities. The Department spent about \$25 billion on military construction in FY 2009 and we will devote another \$23 billion to construction in FY 2010. (As discussed earlier, we are asking for \$18.7 billion for MilCon in FY 2011.) New construction must meet Leadership in Energy and Environmental Design (LEED) Silver standards and/or the five principles of High Performance Sustainable Buildings, which includes exceeding the energy efficiency standard set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers by at least 30 percent.

On the supply side, our military installations are well situated to support solar, wind, geothermal and other forms of renewable energy. As you know, we have the second largest solar array in North America at Nellis Air Force Base in Nevada. Additionally, the geothermal plant at Naval Weapons Center at China Lake, California, is providing electricity to the state's electrical grid; hydrogen fuel cells provide back-up power for facilities at Fort Jackson, South Carolina; and the Marines will test a wave power program at Kaneohe Bay, Hawaii, in the near future.

The Department took advantage of the \$7.4 billion it received through the Recovery Act to invest in both energy efficiency and renewable energy projects. We devoted \$2 billion of that amount to projects designed to improve existing buildings, largely through upgraded systems and equipment. Of that, \$120 million went to ECIP. Another \$1.6 billion of Recovery Act funds is going to construct new facilities, all of which will meet LEED Silver standards and/or the five guiding principles of High Performance Sustainable Buildings.

Third, the Department is drawing on its traditional strength in RDT&E to promote its energy goals. The military has a long history of stimulating new technology, beginning with the War Department's support for the development of interchangeable

machine-made parts for musket production in the 1800's. Although DoD has provided this support solely for national security reasons, the technologies spawned have served as key drivers for U.S. economic growth and competitiveness. The commercial success of these technologies, ranging from aerospace to the internet, has in turn benefited DoD by allowing the military to take advantage of the cost savings and further technology advances from the private sector.

With respect to facilities energy, the military's most valuable role will be as a testbed for next-generation technologies coming out of laboratories in industry, universities and the Department of Energy. DoD's built infrastructure is unique for its size and variety, which captures the diversity of building types and climates in the United States. For a wide range of energy technologies for which deployment decisions must be made at the local level, DoD can play a crucial role by filling the gap (the "valley of death") between research and deployment.

As both a real and a virtual testbed, our facilities can serve two key roles in which the military has historically excelled. One is as a sophisticated first user, evaluating the technical validity, cost and environmental impact of advanced, pre-commercial technologies. For technologies that prove effective, DoD can go on to serve as an early customer, thereby helping create a market, as it did with aircraft, electronics and the internet. This will allow the military to leverage both the cost savings and technology advances that private sector involvement will yield.

We are pursuing the energy test bed approach on a small scale through the Environmental Security Technology Certification Program (ESTCP). Using \$20 million in Recovery Act funding, ESTCP awarded contracts through a competitive solicitation to nine projects to demonstrate technologies that will provide for increased energy efficiency or that will generate cost effective renewable power on site. For example, one ESTCP project team is conducting a multi-site demonstration of building-integrated photovoltaic roof concepts. By verifying that an energy efficient roof can perform its expected function, DoD can increase its capacity to generate renewable energy. The Naval Facilities Engineering Command leads this project in collaboration with Lawrence Berkeley National Laboratory. Demonstrations are taking place at Luke Air Force Base and Marine Corps Air Station Yuma, both in Arizona, and Naval Air Station Patuxent River in Maryland.

The test bed approach is key to meeting the Department's needs, but it is also an essential element of a national strategy to develop and deploy the next generation of energy technologies needed to support our built infrastructure. We hope to expand it, working closely with the Department of Energy and other agencies and organizations.

The Department is pursuing several other initiatives to address specific challenges or impediments to improved installation energy management. Let me briefly describe two of them.

First, we have begun what will likely be a major effort to address the risk to our installations from potential disruptions to the commercial electric grid. The Department is participating in interagency discussions on the magnitude of the threat to the grid and how best to mitigate it. We are also looking at how to ensure that we have the energy needed to maintain critical operations in the face of a disruption to the grid. As required by the National Defense Authorization Act, the Secretary of Defense this year will give Congress a plan for identifying and addressing areas in which electricity needed for carrying out critical military missions on DoD installations is vulnerable to disruption. The development of renewable and alternative energy sources on base will be one element of this effort, because—in combination with other investments—these energy sources can help installations to carry out mission-critical activities and support restoration of the grid in the event of disruption.

Second, we are devoting considerable time and effort to a complex and growing challenge—ensuring that proposals for domestic energy projects, including renewable energy projects, are compatible with military requirements for land and airspace. As noted above, military installations lend themselves to renewable energy development, and a renewable project can benefit the host installation by providing a secure source of energy and reduced energy costs. In some cases, however, a proposed project can interfere with the military mission. For example, wind turbines can degrade air- and ground-based radar, and solar towers can cause interference by creating thermal images detrimental to sensitive testing of weapons systems. The current process for reviewing proposals and handling disputes is opaque, time consuming and ad hoc.

The Department is working to balance the nation's need for renewable sources of energy with military mission needs. The DoD "product team" devoted to sustaining our test and training ranges, which I co-chair, is working to come up with a better process for evaluating proposals from energy developers who want to site a renewable project on or near an installation. We have begun to reach out to potential partners, including other federal agencies, energy developers, state and local governments, and environmental organizations. In addition to working to improve the current approval process, the Department is looking at the role of research and development. New technology can allow us to better measure the potential impact of a proposed project. It can also help to mitigate the impact. For example, recent press accounts suggest that developments in stealth technology as applied to turbine blades can reduce the harm to ground-based (but not air-based) radar.

### III. MANAGING THE NATURAL ENVIRONMENT

In addition to our commitment to managing our energy requirements, we also recognize our natural infrastructure as a priority. The Department sustains the environment on our installations, not only to preserve these lands for our future generations, but also to maintain current and future readiness. The Department practices integrated planning to preserve the land, water, and airspace needed for military readiness while maximizing critical environmental protection. We maintain a high level of environmental quality in defense activities by integrating sustainable practices into our operations, acquisition of materials, and weapon systems. We protect and conserve natural and cultural resources and restore sites to productive reuse on more than 29 million acres. We strive to protect and to sustain the environment while strengthening our operational capacity, reducing our operational costs, and enhancing the well being of our soldiers, civilians, families and communities.

#### Comparison of Environmental Programs Requests

(President's Budget \$ in Millions – Budget Authority)

(\$ millions)	FY 10 Enacted	FY 11 Request	\$ Change	% Change
Environmental Restoration	\$1,505	\$1,539	34	2%
Environmental Compliance	\$1,595	1570	-25	-2%
Environmental Conservation	\$322	\$320	-2	-1%
Pollution Prevention	\$99	\$117	17	15%
Environmental Technology	\$237	\$216	-21	-9%
BRAC Environmental	\$674	\$445	-229	-51%
<b>TOTAL</b>	<b>\$4433</b>	<b>\$4208</b>	<b>-225</b>	<b>-5%</b>

Over the past 10 years, the Department has invested nearly \$42 billion in our environmental programs. In FY 2009, we invested \$4.3 billion and in FY 2010 we are executing another \$4.4 billion for natural and cultural resource conservation, pollution prevention, cleanup, compliance, and environmental technology. The FY 2011 budget request of \$4.2 billion will enable us to continue to demonstrate leadership in protecting and preserving the environment on our installations.

In FY 2009, the Military Services and Defense Agencies invested \$350 million in conservation programs to protect natural and cultural resources located on and near our installations. Our cultural resources include archeological sites, historic buildings, relics of prior civilizations, artifacts, and other national historic treasures.

The Department is committed to protecting its older properties, not only for historical interest, but for continued active use to support today's operational requirements. More than 32 percent of DoD's 300,000 buildings are over 50 years old, and by 2025, more than 67 percent of the Department's buildings will exceed 50 years of age. Buildings that have passed the 50-year mark present a challenge to the Department, but also offer the potential for cost-savings and resource conservation. By using historic buildings and properties, instead of building new structures, the Department reduces its environmental footprint while retaining the properties' historic features. DoD's Cultural Resources Program ensures balance between responsible stewardship of this significant legacy with meeting the demands of defending our nation.

Our installations also steward some of the finest examples of rare native vegetative communities, such as old-growth forests, tall grass prairies, and vernal pool wetlands. As of April 28, 2008, the U.S. Fish and Wildlife Service (USFWS) listed 1,317 species as either threatened or endangered within the United States, more than 300 of which inhabit DoD lands. DoD has a greater density of listed species than any other Federal agency: nearly 40 threatened or endangered species are found only on DoD installations. The Department prepares and implements Integrated Natural Resource Management Plans (INRMPs) for each installation with significant natural resources, which include land management and other actions to protect these endangered species. These plans, developed in coordination with the USFWS and State fish and wildlife agencies, have helped the Department avoid critical habitat designations at 46 installations because the plans provide protection equal to or greater than what would be obtained if critical habitat had been designated for these endangered species. When coupled with our conservation efforts to protect species and their habitats before they become rare, INRMPs have provided increased flexibility in how DoD conducts its mission activities.

The Department is investing \$322 million in FY 2010 conservation efforts, of which \$188 million is planned for recurring continuous conservation management activities, such as preserving habitat for at risk species and habitat vulnerable to global climate change. Additionally, \$134 million is planned for non-recurring one-time projects such as installation of exclusion devices to protect endangered or at-risk species habitats, development of automated acoustic technologies for monitoring migratory birds, and shoreline protection projects. FY 2009 Cultural Resource projects include developing guidance on rehabilitating practices for historic buildings to meet the energy goals of Executive Order 13514 and developing the first contingency operations cultural resources guidance for U.S. Central Command.

The Department is requesting \$320 million for FY 2011 conservation efforts, which includes \$190 million in recurring funds for continuous conservation management activities and \$130 million in non-recurring funds for one-time conservation projects associated with threatened and endangered species, wetland protection, or other natural, cultural, or historical resources.

Since 1984, the Department has obligated more than \$40 billion in the Defense Environmental Restoration Program (DERP). Congress appropriated an additional \$2.2 billion to the DERP in FY 2010, which includes cleanup at active bases, Formerly Used Defense Sites (FUDS), and BRAC bases. DERP consists of two categories of sites: 1) Installation Restoration Program (IRP) sites, which contain hazardous substances, pollutants, and contaminants; and 2) Military Munitions Response Program (MMRP) sites, which contain unexploded ordnance and discarded military munitions. The Department applies a risk-based prioritization process to determine the order of cleanup for both IRP and MMRP sites. By the end of 2009, the Department, in cooperation with state agencies and the U.S. Environmental Protection Agency, had completed cleanup on 78 percent of IRP sites on active installations, 70 percent of IRP sites on FUDS, and 79 percent of IRP sites on installations closed or realigned in the first four rounds of BRAC and BRAC 2005. In FY 2010, we are executing approximately \$1.5 billion at active and FUDS locations and another \$674 million at BRAC bases for environmental restoration efforts. These appropriations should enable us to complete cleanup at an additional 531 sites at active and FUDS locations and 130 sites at BRAC bases.

For the MMRP, DoD has completed cleanup of military munitions at 39 percent of sites at active installations, 60 percent of BRAC installation sites, and 35 percent of FUDS. By cleaning up our sites on a “worst first” basis, we have significantly reduced the potential risk associated with many of the sites in our inventory. These efforts will reduce our long-term liability and ensure the expeditious return of these properties to productive reuse. Our FY 2011 DERP budget request of \$2.0 billion will help implement these improvements while continuing to make progress to complete our cleanups and close out the properties.

<b>IRP Goals</b>	<b>FY 2009</b>	<b>FY 2010*</b>	<b>FY 2011*</b>
<b>Active Installations</b>			
Achieve Remedy-In-Place/Response Complete (RIP/RC) at all sites by the end of FY 2014	86%	88%	91%
<b>FUDS Properties</b>			
Achieve RIP/RC at all sites by the end of FY 2020	71%	74%	77%

<b>MMRP Goals</b>	<b>FY 2009</b>	<b>FY 2010*</b>	<b>FY 2011*</b>
<b>Active Installations</b>			
Complete Preliminary Assessments (PAs) at all Munitions Response Sites (MRSs) by the end of FY 2007	97%	98%	99%
Complete Site Inspections (SIs) at all MRSs by the end of FY 2010	72%	97%	99%
Achieve RIP/RC at all MRSs by the end of FY 2020	43%	53%	54%
<b>FUDS Properties</b>			
Complete PAs at all MRSs by the end of FY 2007	96%	96%	96%
Complete SIs at all MRSs by the end of FY 2010	67%	82%	91%

\* Projections for FY 2010 and FY 2011, based on FY 2009 data

Partnerships with state, local, and other federal agencies are an important contributor to our continued progress toward achieving our IRP and MMRP Goals. Coordination and communication with stakeholders on our cleanups has produced a shared sense of responsibility and urgency to return sites to productive use. More importantly, our engagement of stakeholders in the program has built trust in our ability to protect public health and the environment, and safely work and train in close proximity to our surrounding communities.

As we continue to make cleanup progress, we are emphasizing optimization of performance. Optimization efforts include considering green remediation technologies, reducing the number of cleanups involving long-term management, and achieving site closeout in a timely manner. Our efforts to develop and employ technologies that expedite cleanups are reducing the need for long-term management of our sites, resulting in lower costs and better progress towards program goals. Through our investments in the Strategic Environmental Research and Development Program and the Environmental Security and Technology Certification Program, we develop, demonstrate, and validate innovative cleanup technologies that provide the market with more efficient and effective cleanup technologies. The cleanup strategies we develop and implement for BRAC sites contribute significantly to the prompt transfer and redevelopment of sites.

We lead other federal agencies in employing green remediation strategies that produce less waste, use fewer natural resources, and expend less energy to clean up our

sites. In August, we issued a green remediation policy which expands upon DoD's current practices of optimization. Green remediation uses strategies that consider all environmental effects of remedy implementation and incorporates options to maximize the overall environmental benefit of cleanup actions. Our strategies focus on a number of goals, including: preserving natural resources, minimizing energy use and increasing energy efficiency, minimizing carbon dioxide emissions, using passive sampling where feasible, minimizing fresh water consumption and maximizing water reuse, maximizing the recycling and reuse of materials, and minimizing the overall footprint of the remedial system. This is the way of the future; DoD is among the leaders in the nation in adopting green and sustainable remediation practices.

The FY 2011 budget request of \$117 million for pollution prevention will enable DoD to continue to meet our solid waste diversion and recycling goals while reducing our operating costs. Striking a balance between mission requirements and environmental quality, the Department employs long-term solutions to eliminate hazardous material use in operations and weapon systems acquisition, promote the use of alternative fuels, and implement innovative technologies to reduce pollution of our air, water, and land. In 2009, the Department invested \$114 million in pollution prevention programs, including recurring requirements such as solid waste diversion and recycling, hazardous material reduction, and green procurement. In FY 2009 the Department diverted 2.8 million tons or 55 percent of our solid waste from landfills, avoiding approximately \$160 million in landfill costs. Additionally, the Department has reduced hazardous waste disposal by 15 percent from 2007 to 2008. The Department is also effectively managing air quality, reducing hazardous air pollutant emissions at our installations by 455 tons, or 27 percent, from 2007 to 2008. In FY 2010, we are executing \$99 million for pollution prevention, with another \$117 million planned for FY 2011. These levels of investment will enable DoD to continue to meet our diversion and recycling goals while reducing our operating costs.

In FY 2009, the Department obligated \$1.5 billion for environmental compliance activities. Clean water and clean air are essential to the health and well being of our communities and ecosystems. DoD management practices reduce discharged pollutants, leverage water conservation opportunities, and protect watersheds. Our drinking water program has consistently provided over 3,400,000 men, women, and children living and working on our installations with safe drinking water. The Department also manages almost 1,500 water pollution control permits for our wastewater and storm water treatment systems, which achieved an overall 94 percent rate of compliance in 2009, which is above the national average. Our FY 2010 appropriation included another \$1.6 billion to upgrade treatment facilities and meet new and expanding permit requirements.

Our FY 2011 budget request of \$1.6 billion will enable the Department to continue to protect and to sustain the environment while maintaining operational readiness. With this steady level of investment, DoD will continue to demonstrate strong environmental stewardship.

## *Environmental Technology*

A key part of DoD's approach to meeting its environmental obligations and improving its performance is pursuing advances in science and technology. The Department has a long record of excellence in developing innovative environmental technology and moving them out of the laboratory onto installations, depots, and weapon systems. The Department relies on the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) to develop and demonstrate new methods and technologies that address the Department's highest priority environmental requirements. The FY 2011 budget request includes \$68.5 million for SERDP research and \$30.4 million for ESTCP demonstrations.

The objective of SERDP and ESTCP is to improve DoD mission readiness and environmental performance by providing new scientific knowledge and cost-effective technologies in the areas of Environmental Restoration, Munitions Management, Sustainable Infrastructure, and Weapons Systems and Platforms. These programs continue to significantly reduce the cost of our environmental programs, decrease the life cycle costs of weapon systems, and move our ranges and installations toward a sustainable future. They enhance military operations, improve military systems' effectiveness, enhance military training/readiness, sustain DoD's training and test ranges and installation infrastructure, and help ensure the safety and welfare of military personnel and their dependents by eliminating or reducing the generation of pollution and use of hazardous materials and reducing the cost of remedial actions and compliance with environmental laws and regulations.

As highlighted in the recent QDR, among our greatest challenges is dealing with the issues of climate change and energy. Climate change and energy produce distinct types of challenges but they are inextricably linked. SERDP is leading the Department's efforts to develop climate change assessment tools and begin the work of developing adaptation approaches that will allow DoD to continue meet its national security mission in the face of expected climate impacts. ESTCP is leading the Department's effort to speed innovative energy technologies from laboratories to military end users. ESTCP will use military installations as a test bed to demonstrate and create a market for innovative energy efficiency and renewable energy technologies coming out of the private sector, DoD, and Department of Energy laboratories.

The Environmental Technology Program funds environmental research, development, test, demonstration, and validation activities to provide technologies that result in direct operational savings, mitigate future liabilities, and permit the Department to meet its environmental obligations more cost-effectively. The Environmental

Technology budget request for FY2011 is \$216 million, a decrease of \$8 million over the FY2010 request of \$225 million.

### *Sustainable Ranges Initiative*

Today, as our men and women in uniform are deployed around the globe, experience has taught us that realistic testing and training saves lives, but it also requires substantial resources - air, land, sea space, and frequency spectrum. The rise in urban growth, renewable energy projects, off-shore drilling and other activities can pose growing challenges to these critical DoD testing and training resources. DoD's Sustainable Ranges Initiative (SRI) addresses these challenges through innovative partnerships and proactive engagement beyond our installation and range fence lines.

A key component of SRI is the Readiness and Environmental Protection Initiative (REPI). REPI enables the Department to apply dedicated funds to leverage other military department funds and the resources of outside organizations to preserve key buffer land near installations and ranges. With help from Congress, and broad acceptance and participation by a wide range of state and local governments and conservation organizations, REPI has proven a very successful program. For FY2011, the budget requests \$39.8 million for continuation of the Department's REPI efforts to protect critical training, testing, and operational capabilities at locations such as the Navy's Fallon Naval Air Station in Nevada and the Army's live-fire training ranges at Fort A.P. Hill, Virginia. Near-term opportunities to partner and preserve key buffer land through REPI are increasing given the current drop in real estate values across the country. Every dollar invested now repays itself many times by preserving our long term capability to test and train. With your help, the Department will use the requested funds to continue our efforts to ensure that our military training and testing opportunities remained unrivaled.

### **Conclusion**

My office, Installations and Environment, takes very seriously our mission to strengthen DoD's infrastructure backbone—the installations that serve to train, deploy and support our warfighters. Thank you for your strong support for the Department's installation and environment programs, and for its military mission more broadly. I look forward to working with you on the challenges and opportunities ahead.