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BY THE COMMITTEE

Statement of
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Before the Senate Armed Services Committee
Subcommittee on Readiness and Management Support

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Chairman McCaskill, Senator Ayotte and distinguished members of the subcommittee: thank you for the opportunity to present the President's Fiscal Year 2012 budget request for the Department of Defense programs to support installations, installations energy 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 the warfighter, by providing “reachback” support for combat operations. 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.

My testimony addresses four key topics: first, international and domestic basing decisions, including the buildup of Marines in Guam and the 2005 Base Realignment and Closure (BRAC) process; second, the Department's management of the built environment, including the programs that support military construction, family housing, and sustainment and recapitalization; third, our strategy for improving the energy efficiency and energy security of our installations; and, fourth, our programs for protecting 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. My office supports the Department's strategic security objectives by ensuring that decisions about international basing of troops and facilities are the product of joint planning and rigorous analysis. We also seek to leverage existing infrastructure wherever possible. As examples, we are assisting the Services with planning for the U.S. Forces Korea transformation initiatives, the recapitalization and consolidation of the Landstuhl Regional Medical Center in Germany, and the relocation of thousands of Marines and their families from Okinawa to Guam.

Rebasing Marines from Okinawa to Guam

The realignment of Marines from Okinawa to Guam represents a major change in our force posture in Asia. It is designed to further several strategic goals. First, it will strengthen our alliance with Japan by relieving long-standing pressures associated with our presence in Okinawa. Second, it will ensure the long-term presence of U.S. forces in

Japan and the Western Pacific. Third, by making better use of Guam's strategic advantages, it will more effectively array U.S. forces to deal with the complex and evolving security environment in Asia.

The U.S. is unlikely to get another opportunity to craft a strategic realignment that both enhances our regional force posture and incorporates substantial funding from a key ally—in this case, the Government of Japan, which has pledged more than \$6 billion. As a testament to its commitment to the realignment plan, Japan has already provided \$834 million in direct funding for construction and has another \$582 million in its current budget, \$415 million of which will go to improve Guam's utilities infrastructure.

The President's FY 2012 budget request includes \$181 million for construction projects to support the Marine relocation to Guam. Our request includes another \$33 million for projects to address the socio-economic impact of the buildup, including a repository for the preservation of artifacts unearthed during military construction as required by the National Historic Preservation Act (NHPA). Recognizing that the strategic value of the buildup warrants a "whole-of-government" approach, the FY 2012 budget request also includes \$34 million in commitments from other federal agencies. These projects will yield long-term benefits for U.S. military forces as well as help mitigate the impact of the marked increase in Guam's population that a major military construction program and the subsequent realignment will produce. They will also demonstrate our commitment to working with the Government of Guam, whose support for the relocation is key. As one indication, Guam last week signed the "Programmatic Agreement" required under the NHPA, which paves the way for military construction by establishing protocols for the preservation of artifacts that we uncover.

The movement of Marines from Okinawa to Guam gives us a rare opportunity to build an installation from the ground up. We intend to take full advantage of this opportunity, using contemporary urban planning techniques to avoid sprawl and minimize land use. We will also integrate modern energy technology and sustainability practices to create an enduring base that meets our current and future requirements while minimizing impact on the local community and the island's natural resources.

Domestic Basing: Base Realignment and Closure

Turning to domestic basing, we are in the final year of implementation of BRAC 2005, with all 222 recommendations required to be completed by September 15th. While the Department is facing challenges to meeting that schedule in a few cases, we are working diligently to ensure that we satisfy our legal obligations. Once implementation is completed, we expect to realize an estimated \$4 billion in annual savings.

While our investments are creating economic opportunities for communities experiencing growth as a result of BRAC, some of those communities feel that the Department has ignored potential adverse effects. One particular concern is the impact of growth on local transportation networks. Although we have the authority to mitigate transportation

impacts of BRAC through the Defense Access Road (DAR) program, we have been criticized for defining those impacts too narrowly. In response to congressional direction, the National Academy of Sciences studied the effects of BRAC on local transportation, and we plan to revise the DAR funding criteria based on the findings of this recently completed study. This revision will make it easier for us to mitigate adverse traffic impacts caused by the Department's actions, particularly in congested urban areas.

A significant action under BRAC 2005 that my office has championed is the consolidation of 26 installations into 12 Joint Bases. Joint Bases represent a fundamental change in our approach to installation management. Predictably, we are beginning to realize efficiencies from this initiative, many of them the result of economies of scale. For example, consolidating all recycling operations at Joint Base McGuire-Dix-Lakehurst saved \$1 million in facility and equipment requirements and reduced overall contract costs by \$200,000 annually. Far more important, however, is that our Joint Base commanders—faced with parallel and often-conflicting Service rules and requirements—are successfully implementing new, cross-cutting business processes. This ability to transcend traditional practices and develop innovative solutions to long-standing inefficiencies is key to positioning ourselves for future, Department-wide reforms.

I had the opportunity to meet personally with most of the Joint Base Commanders in February at our Program Management Review. I am excited about the prospects for using Joint Bases as “incubators for innovation,” as one Joint Base commander put it. I also continue to be encouraged by their can-do attitude and dedication to providing the highest quality service, not only in support of the military missions on their sites, but to Service Members and their families as well.

Finally, one of the key tools for disposing of property under BRAC is the Economic Development Conveyance (EDC), which was created in 1994 to promote the rapid transfer of BRAC property for job-creating economic development. In recent years, EDC conveyances have been delayed by complicated negotiations over the value of one-of-a-kind parcels of property. As negotiations dragged on, the Department paid for property maintenance and the community was unable to redevelop the property and create jobs. Last year, Congress amended the statutory authority underlying EDCs to remove the requirement that the Department seek to obtain Fair Market Value for an EDC. The amended law also provides explicit authority for the Department to use flexible tools for determination of “consideration” (payment), such as so-called “back-end” financing. We are finalizing a regulation that will implement these much-needed amendments to the EDC law, and we hope to issue it soon. Our goal is to simplify and accelerate the EDC process by allowing both communities and the Department to share in the success of redevelopment efforts.

II. MANAGING OUR BUILT ENVIRONMENT

The President's FY 2012 budget requests \$14.8 billion for Military Construction (MilCon) and Family Housing—a decrease of approximately \$4.0 billion from the FY 2011 requested level. This decrease primarily reflects the decline in investment needed as we approach the end of BRAC 2005.

MilCon and Family Housing Budget Request, FY 2012 vs. FY 2011

(\$ Millions)	FY 2011 Request	FY 2012 Request	Change from FY 2011	
			Funding	Percent
Military Construction	13,705.7	12,006.4	-1,699.3	-12%
Base Realignment and Closure IV	360.5	323.5	-37.0	-10%
Base Realignment and Closure 2005	2,354.3	258.8	-2,095.5	-89%
Family Housing Construction/Improvements	356.8	373.7	16.9	5%
Family Housing Operations & Maintenance	1,448.7	1,318.2	-130.5	-9%
Family Housing Improvement Fund	1.1	2.2	1.1	100%
Homeowners Assistance Program	16.5	1.3	-15.2	-92%
Chemical Demilitarization	125.0	75.3	-49.7	-40%
Energy Conservation Investment Program	120.0	135.0	15.0	13%
NATO Security Investment Program	258.9	272.6	13.7	5%
TOTAL	18,747.5	14,767.0	-3,980.5	-21%

Military Construction

We are requesting \$12.5 billion for “pure” military construction— *i.e.*, exclusive of BRAC and Family Housing. This request addresses routine needs for construction at enduring U.S. and overseas installations and for specific programs such as the NATO Security Investment Program and the Energy Conservation Investment Program. In addition, we are targeting MilCon funds in three key areas.

First and most important, we are supporting operational mission requirements. MilCon is key to initiatives such as Grow the Force and the Global Defense Posture Realignment, as well as to the fielding of modernized and transformational weapon systems such as the F-22, the F-35 and the MQ-9. Our budget request also includes a range of mission support facilities—for Special Operations Forces, Guard and Reserve units, and the Army’s transformation into a brigade-centric, modular force.

Second, the President’s budget request supports the continued recapitalization of our DoD-dependent schools here in the United States and overseas. We are now in the second year of a six-year plan to repair or replace all 134 schools that were in poor or failing physical condition. The FY 2012 budget request includes \$550 million to recapitalize 15 of these schools.

Third, the FY 2012 budget request includes more than \$1.1 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. Our budget addresses projects that directly affect patient care by improving and expanding existing facilities, and providing additional capacity to support Grow the Army. It also allows us to continue improving the medical research facilities that support vital chemical-biological defense efforts.

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 mission capable and in good working order. The FY 2012 budget request includes \$8.8 billion for sustainment and \$9.0 billion for recapitalization (restoration and modernization) of our facilities.

Sustainment represents the Department’s single most important investment in the health of its facilities. It includes regularly scheduled maintenance and repair or replacement of facility components—the periodic, predictable investments an owner should make across the service life of a facility to slow its deterioration and optimize the owner’s investment.

Sustainment and Recapitalization Budget Request, FY 2012 vs. FY 2011

(\$ Millions)	FY 2011 Request	FY 2012 Request	Change from FY 2011	
			Funding	Percent
Sustainment (O&M & MilPers)	9,042	8,835	-207	-2%
Recapitalization (O&M, MilCon, MilPers, RDT&E)	4,583	9,031	4,448	97%
TOTAL	13,625	17,866	4,241	31%

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 facilities. Our policy calls for the Services to fund sustainment at no less than 90 percent of the FSM-generated estimate. For FY 2012, however, the Navy and Air Force have opted to take risk, funding sustainment at only the 80 percent level.¹ As a result, our FY 2012 budget request funds sustainment DoD-wide at only 86 percent of the FSM-generated estimate.

Recapitalization (restoration and modernization) serves to keep the inventory of facilities modern and relevant, extend the service life of individual facilities, and restore capability lost due to man-made or natural causes. Compared with sustainment, recapitalization needs are harder to forecast because they are a function of *change*—in functional standards (*e.g.*, a new requirement for the configuration of enlisted housing rooms), in available technology (*e.g.*, new lighting fixtures and next-generation boilers) and even in the mission that the facility supports. The FY 2012 budget requests \$9.0 billion for recapitalization—\$4.4 billion more than the FY 2011 request. This reflects an increased emphasis by the Army and Air Force on upgrading their existing facilities.

Finally, demolition (including deconstruction to recycle and reuse building parts) is an important tool in any recapitalization effort. Our FY 2012 budget requests \$409 million to eliminate more than 17 million square feet of facilities—a demonstration of our commitment to demolish what we no longer need or cannot economically repair.

¹ The Navy and Air Force believe they can manage this risk by prioritizing their sustainment needs. However, the recent flooding of the U.S. Strategic Command headquarters demonstrates how difficult it is to do this: the flooding was due in part to a history of insufficient preventive maintenance at what is a mission-critical facility.

Family and Unaccompanied Housing

Housing is key to quality of life—in the military no less than in the civilian world. The FY 2012 budget requests \$1.7 billion for family housing, which supports our goal of having 90 percent of family housing in good or fair condition starting in FY 2012.

The Services have relied largely on privatization to address a dual problem: traditionally, much of the military-owned family housing was in poor condition, and military families often could not find affordable rental housing in the local economy. In my view, privatization of family housing—where the Services partner with the private sector to generate housing built to market standards—is the single most effective reform my office has carried out. First, it is extremely cost effective: with an investment of only \$2.7 billion, the Services have generated \$27 billion in privatized housing—a 10:1 leverage ratio. Moreover, the private owners are responsible for maintenance and operation, including necessary recapitalization, for the full 50 years of the project. Second, the housing is of high quality; most of it is more appealing to young families than what the MilCon process would produce. Finally, the private owners have a strong incentive to maintain the housing because they need to be able to attract and retain military tenants.

Family Housing Budget Request, FY 2012 vs. FY 2011

(\$ Millions)	FY 2011 Request	FY 2012 Request	Change from FY 2011	
			Funding	Percent
Family Housing Construction/Improvements	356.8	373.7	16.9	5%
Family Housing Operations & Maintenance	1,448.7	1,318.2	-130.5	-9%
Family Housing Improvement Fund	1.1	2.2	1.1	100%
Homeowners Assistance Program	16.5	1.3	-15.2	-92%
TOTAL	1,823.1	1,695.4	-127.7	-7%

For government-owned family housing, the FY 2012 budget requests \$374 million to replace or improve 2412 units at U.S. bases and enduring locations overseas. We are requesting an additional \$1.3 billion to operate and maintain 42,000 units worldwide.

The Department is committed to improving housing for its unaccompanied Service Members as well. In past years, we have made sizable investments in this area to support initiatives such as BRAC, global restationing, force structure modernization, and Homeport Ashore, a Navy program to move Sailors from their ships to shore-based housing. The FY 2012 budget request includes about \$1.7 billion for construction of new and replacement projects for nearly 15,000 unaccompanied Service Members.

As the Department nears the goal it set for new construction of unaccompanied housing, we are shifting the focus to long-term sustainment of the modernized inventory. My office has worked closely with the Comptroller to establish quality standards and performance goals for sustainment of unaccompanied housing. In this year's budget process, we instituted a key performance goal: 90 percent of unaccompanied housing should be in good or fair condition by the end of FY 2017.

III. MANAGING OUR ENERGY USE

The performance of an installation is increasingly linked to its management and use of energy. Installation, or facilities, energy is important for two reasons. First, it represents a significant cost. In 2010, DoD spent \$4.0 billion, or 26 percent of the Department's energy bill, on facilities energy. Second, facilities energy is key to mission assurance. According to the Defense Science Board, DoD's reliance on a fragile grid to deliver electricity to its bases places critical missions at risk.² Most installations cannot manage their demand for and supply of power and are thus vulnerable to intermittent and/or prolonged power disruption due to natural and manmade disasters.

The Department has three interrelated goals with respect to facilities energy:

- Reduce energy usage and intensity
- Increase renewable and onsite (distributed) energy generation
- Improve energy security

Our strategy directly reflects those goals.

First and most important, we are reducing the demand for traditional energy through conservation and energy efficiency. The Department spends almost \$10 billion a year to sustain, restore and modernize our existing facilities. As part of this process, we are retrofitting our buildings with energy efficient components and systems, such as improved lighting, high-efficiency HVAC systems, double-pane windows, energy management control systems and new roofs. Fully one-fourth of the \$7.4 billion that the Department spent on facility sustainment and recapitalization under the American Recovery and Reinvestment Act (ARRA) went directly to improve energy efficiency.

² "More Fight-Less Fuel," Report of the Defense Science Board Task Force on DoD Energy Strategy, February 2008.

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. All new construction must meet the LEED (Leadership in Energy and Environmental Design) Silver standard and/or the five principles of High Performance Sustainable Buildings. In either case, new construction must exceed the energy efficiency standard set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) by at least 30 percent.

In short, the Department's Sustainment and Milcon programs are the engine of our drive to reduce facility energy use. To be sure, this effort to "green" our facilities is good for the environment. But it is driven above all by our desire to get major cost savings.

Second, the Department is increasing the supply of renewable and alternative energy on our installations. Our installations are well situated to support solar, wind, geothermal and other forms of renewable energy. The geothermal plant at Naval Weapons Center China Lake in California provides 270 MWs of power to the state's electrical grid—enough to supply a small city; and Nellis Air Force Base in Nevada has the second largest solar array in North America. Although opportunities for utility-scale solar may be limited (one impediment is the lack of water), the roofs of our buildings represent a major resource. For example, in Hawaii, the 5900 units of privatized Army family housing feature rooftop photovoltaic (PV) solar panels, making this the world's largest residential PV project. As a matter of policy, the Navy and the Marine Corps now require that all new roofs and roof replacements incorporate solar panels or some other green feature.

Third, we are striving to improve the energy security of our installations, with an emphasis on the risk from potential disruptions to the commercial grid. The Department is participating in interagency discussions on the magnitude of the threat to the grid and how best to mitigate it. Closer to home, we are looking at how to ensure that we have the energy needed to maintain critical operations in the face of a major disruption. As required by the National Defense Authorization Act (NDAA), the Department recently gave Congress a preliminary plan for identifying and addressing areas in which electricity needed to carry 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: in combination with other investments such as smart microgrid technology, renewable and onsite energy sources can help installations carry out mission-critical activities and support restoration of the grid in the event of disruption.

As DoD strives to improve its energy efficiency and security, accurate, real-time information about energy use is essential: to borrow the oft-used phrase, you can't manage what you can measure. My office is developing policy guidance that will require the Services to meter a larger share of their energy consumption. We are also leading the effort to develop a DoD-wide energy information management system. Leading firms such as Wal-Mart have such a system, and so should DoD. Toward that end, we have

defined a standard set of energy information management requirements and are assessing which information management technologies (future and current) will best support them.

Although the Department is steadily improving its installation energy performance, we have failed to meet key statutory and regulatory goals for the last two years. We fell short of the 2010 goal for energy intensity (15 percent reduction relative to 2003) largely because of the Army's performance. On another key metric, renewable energy, while we are on track to meet the NDAA target (produce/procure 25 percent of electricity from renewable sources by 2025), we missed the Energy Policy Act target (7.5 percent renewable use by 2013), which excludes geothermal. See the Appendix for more detail.

FY 2012 Budget Request

Let me highlight two programs in our FY 2012 budget request that are particularly important to the Department's energy strategy: the Installation Energy Test Bed and the Energy Conservation Investment Program (ECIP).

Installation Energy Test Bed

We are requesting \$30 million in FY 2012 for energy technology demonstrations by the Environmental Security Technology Certification Program (ESTCP).³ ESTCP began these demonstrations—known as our Installation Energy Test Bed—as a pilot in 2009 with \$20 million in ARRA funds. Seeing the value of these demonstrations, in 2010, the Department directed \$30 million from ECIP, a flexible MilCon line, to ESTCP to continue the Test Bed. This year, we are seeking to fund the Test Bed as the RDT&E activity it is. It is a high leverage program that we believe will produce major savings.

The purpose of the Test Bed is to demonstrate new energy technologies in a real-world, integrated building environment so as to reduce risk, overcome barriers to deployment and facilitate wide-scale commercialization. The rationale is straightforward. Emerging technologies offer a way to cost effectively reduce DoD's facility energy demand by a dramatic amount (50 percent in existing buildings and 70 percent in new construction) and provide distributed generation to improve energy security. Absent outside validation, however, these new technologies will not be widely deployed in time for us to meet our energy requirements. There is an extensive literature on the impediments to commercialization of emerging technologies for the building energy market. Among other problems, the first user bears significant costs but gets the same return as followers. These barriers are particularly problematic for new technologies intended to improve energy efficiency in the retrofit market, which is where DoD has the greatest interest.

It is in DoD's direct self-interest to help firms overcome the barriers to deployment and commercialization of their technology. We have a vast inventory of buildings: nearly

³ As discussed in section IV below, we are also requesting \$33.6 million for ESTCP for *environmental* technology demonstrations. These two demonstration programs appear as separate lines under ESTCP in the President's FY 2012 budget request.

300,000 structures and 2.2 billion square feet of space—three times the footprint of Wal-Mart and ten times that of the General Services Administration. Given what we spend to power our facilities (\$4 billion a year), the potential cost savings are significant.

One indication of the value of this approach is that Wal-Mart, the largest private sector energy consumer in the United States, has its own test bed. Wal-Mart systematically tests innovative energy technologies at designated stores to assess their performance and cost effectiveness. For technologies that prove to be cost effective (not all of them do, which is itself a valuable finding), Wal-Mart deploys them in all of its stores. This approach has helped Wal-Mart dramatically reduce its energy consumption. But whereas Wal-Mart's focus is narrow because all of its stores are identical (big-box design), the military needs solutions for a diverse mix of building types and sizes—everything from barracks and office buildings to aircraft repair depots and data centers.

ESTCP has successfully piloted the Test Bed over the last two years.⁴ Each year, ESTCP has issued a solicitation inviting private firms, universities and government labs to identify emerging technologies that would meet DoD installation needs. The response has been huge: in 2010, ESTCP received more than 300 proposals from leading corporations in the building energy sector, small startups with venture capital funding and the major DOE labs. Teams made up of technical experts from inside and outside of DoD and Service representatives familiar with the installations' needs review the proposals, and winning proposals (ESTCP has selected about 15 percent of the ones submitted) are matched up with a Service and an installation at which to demonstrate the technology. ESTCP expects some of the projects to begin to show results this year.

The Test Bed has five focus areas: advanced components to improve building energy efficiency; advanced building energy management and control; smart microgrid and energy storage to improve energy security; tools and processes for design, assessment and decision-making for energy use and management; and renewable energy generation on DoD installations. The Test Bed requires no new physical infrastructure; rather, it operates as a distributed activity whose key element is the systematic evaluation of new technologies, both to determine their performance, readiness and life cycle costs, and to provide guidance and design information for future deployment across installations.

The timing for an Energy Test Bed is ideal—one reason the response from industry has been so strong. The federal government is investing significant resources in building energy R&D, largely through the Department of Energy, and the private sector is making even larger investments as evidenced by the growth of venture capital backing for “cleantech.” As a structured demonstration program linked to the large DoD market, the ESTCP Test Bed can leverage these resources for the military's benefit.

⁴ The approach is similar to one that ESTCP has used since 1995 to demonstrate innovative environmental technologies on DoD sites and in doing so help them transition to the commercial market. As discussed in section IV below, ESTCP has a strong track record of reducing DoD's environmental costs.

Energy Conservation Investment Program

The second key program to highlight is the Energy Conservation Investment Program (ECIP). The FY 2012 budget requests \$135 million for ECIP, a \$15 million increase compared to our FY 2011 request. ECIP has a long history of producing savings for the Services, and we are reorienting the program to give it even greater leverage.

ECIP traditionally has funded small projects that promise a significant payback in reduced energy costs, and the Services have relied heavily on it to achieve their energy goals. Although ECIP has enjoyed strong support in Congress and elsewhere, it is and will remain a relatively small program. Thus, it can achieve only a fraction of the Department's energy goals. Moreover, the Services are establishing and funding their own, much larger programs aimed at improving their energy performance.

In keeping with the Department's growing focus on energy, I recently issued policy guidance designed to change the role that ECIP will play—from one of funding the Services' routine energy projects to one of leveraging their now-larger investments in ways that will produce “game-changing” improvements in energy consumption, costs and/or security. To illustrate, ECIP projects should have the following types of goals:

- Dramatically change energy consumption at an individual installation, *e.g.*, by fundamentally improving the performance of the power or steam plant;
- Implement across multiple installations a technology validated in a demonstration program sponsored by DoD (*e.g.*, the Installation Energy Test Bed) or the Department of Energy (DOE);
- Integrate technologies designed to achieve different goals (*e.g.*, energy efficiency and energy security) to realize synergistic benefits;
- Integrate distributed generation and storage technologies to improve supply resiliency for critical loads; and,
- Implement energy security or net-zero energy installation plans, especially at those installations where such investments leverage partnerships with DOE.

In terms of implementation, this new vision for ECIP means that my office will no longer use financial payback as the sole criterion for judging the merits of potential projects. In evaluating a candidate project, we will now give as much weight to its energy impact (reduction in BTUs) as to its financial payback, and we will give secondary consideration to the impact of the project on the nominating installation's energy security.

As this change reflects, ECIP is now part of a portfolio approach in which the Services can pursue the most financially attractive energy projects via third-party financing, such as an Energy Savings Performance Contract, or through their own budgets. ECIP will support projects that will have a big impact on the Services' energy efficiency and energy security but that cannot be justified under their internal funding strategies.

IV. PROTECTING THE NATURAL ENVIRONMENT

The Department has long made it a priority to protect our natural and cultural resources: as the Marine Corps puts it, “A country worth fighting for is a country worth preserving.” The Department protects the environment on our installations, not only to preserve irreplaceable resources for future generations, but to ensure that we have the land, water, and airspace we need for military readiness. Over the last ten years, the Department has invested \$42 billion in its environmental programs, and our steady level of expenditure has produced quality results. In FY2012, we are requesting \$4.3 billion to continue this legacy of leadership.

Environmental Program Budget Request, FY 2012 vs. FY 2011

(\$ Millions)	FY 2011 Request	FY 2012 Request	Change from FY 2011	
			Funding	Percent
Environmental Restoration	1,539	1,467	-72	-4.7%
Environmental Compliance	1,570	1,551	-19	-1.2%
Environmental Conservation	320	380	+60	+18.8%
Pollution Prevention	117	104	-13	-11.1%
Environmental Technology	216	227	+11	+5.1%
BRAC Environmental	445	521	+76	+17.1%
TOTAL	\$4,207	\$4,250	+43	+1.0%

Environmental Conservation

Our installations are home to some of the finest examples of rare native vegetative communities, such as old-growth forests, tall grass prairies and vernal pool wetlands. DoD has a greater density of endangered and threatened species than any other Federal agency. Of the 1,372 species considered threatened or endangered by the U.S. Fish & Wildlife Service (USFWS), more than 420 inhabit DoD land. Nearly 40 threatened and endangered species are found exclusively on DoD installations. The Department develops plans to protect the natural environment while maintaining support for mission requirements in coordination with the USFWS and its State counterparts. These plans have helped us maintain flexibility for mission activities, avoiding critical habitat designations while providing equal or greater protection for endangered species.

In addition to natural resources, the Department is responsible for thousands of archaeological sites, historic buildings and other cultural resources. DoD owns or manages the nation's largest inventory of Federal historic properties and continues to use many of these historic properties to meet mission requirements. Using these properties reduces DoD's environmental footprint and retains significant cultural resources for future generations. In addition, many older buildings have features that we consider to be "green" today, such as high ceilings to encourage air circulation, large windows to provide maximum natural light and operational shutters to reduce heat gain.

The Department is requesting \$380 million in FY 2012 for environmental conservation, which includes \$226 million in recurring funds for ongoing activities and \$154 million in non-recurring funds for one-time projects directed at threatened and endangered species, wetland protection, or other natural, cultural and historical resources. This represents an increase of 18.8 percent over the FY 2011 request. Specifically, the Navy has increased its request to meet legal requirements of conservation laws and regulations, primarily in support of offshore range Environmental Impact Statements and consultations under the Marine Mammal Protection Act and the Endangered Species Act. The Army has increased its request as well to more accurately reflect program requirements.

Environmental Restoration

The Defense Environmental Restoration Program provides funds for two types of environmental cleanup. The Installation Restoration Program (IRP) manages the cleanup of hazardous substances, pollutants and contaminants—things that cause human health concerns. The Military Munitions Response Program (MMRP) manages the cleanup of unexploded ordnance and discarded military munitions—things that may explode. The cleanup occurs at three types of locations: active military bases, bases closed through the BRAC process, and other Formerly Used Defense Sites.

By the end of 2010, the Department, in cooperation with state agencies and the U.S. Environmental Protection Agency, had completed cleanup activities on 79 percent of IRP sites, and it is now monitoring the results. For MMRP sites, the comparable figure is 40 percent. The Department determines the order of cleanup for both IRP and MMRP sites on the basis of risk. By cleaning up the "worst first," we reduce our long-term liability and expedite the return of properties to productive reuse.

We are requesting \$2.0 billion for FY 2012 to clean up IRP and MMRP sites. (This includes both \$1.5 billion for "Environmental Restoration" and \$458 million for "BRAC Environmental.") The budget request for Environmental Restoration is \$72 million less than it was in FY 2011, primarily because of a reduction in the Army's MMRP requirement. At the same time, we are asking for \$76 million more than in FY 2011 for BRAC Environmental to support requirements at Army and Navy BRAC installations.

Pollution Prevention

The Department employs a number of strategies to reduce pollution of our air, water, and land. They include eliminating the use of certain hazardous materials in our operations and weapon systems, promoting the use of alternative fuels and green products, and implementing innovative technologies. These and other strategies lower our life cycle costs, improve mission capabilities and protect our assets.

Investments in pollution prevention pay dividends. In 2010 the Department diverted 3.9 million tons or 62 percent of our solid waste from landfills, avoiding approximately \$176 million in landfill disposal costs. We reduced hazardous waste disposal by 8 percent from 2008 to 2009. Our installations also effectively manage air quality: they reduced hazardous air pollutant emissions by 420 tons, or 25 percent, from 2008 to 2009.

The President's budget requests \$104 million for pollution prevention in FY 2012, a reduction of \$13 million from our FY 2011 request. This decrease reflects the growing maturity of the pollution prevention program: having completed activities that require significant investment to reduce pollution after the fact, the Department is now focusing on the more cost-effective strategy of preventing pollution in the first place, for example, by influencing the planning and design of weapons systems.

Environmental Compliance

Clean water and air are essential to the health and well being of our communities and ecosystems. The Department maintains a high level of compliance with environmental laws and regulations: although environmental regulators performed more than 3,000 inspections in FY 2010—a 30+ percent increase from 10 years ago—DoD was subject to enforcement actions for only 9 percent of these inspections, which is an all time low.

Our FY 2012 budget requests \$1.6 billion for environmental compliance—a negligible (\$19 million) decrease from last year's request. This steady level of investment will enable the Department to continue to protect the environment while maintaining operational readiness.

Environmental Technology

A key part of DoD's approach to meeting its environmental obligations and improving its performance is its pursuit of advances in science and technology. The Department has a long record of success when it comes to developing innovative environmental technologies and getting them transferred out of the laboratory and into actual use—on our installations, in our depots and in the very weapon systems we acquire.

To accomplish this, the Department relies on two closely linked programs—the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP). SERDP is the Department's environmental science and technology program; its mission is to address high priority

cross-service environmental requirements and develop solutions to the Department's most critical environmental challenges. Through a competitive process, it invests in applied research and advanced technology development guided by DoD users needs but executed by the leading research establishments in both the private and public sectors. It has a balanced portfolio of projects ranging from high risk leap-ahead technologies to fundamental engineering needed to solve critical near term problems. SERDP has a superb track record: as one of the only R&D programs aimed at reducing DoD operating costs, it has saved the Department billions of dollars in environmental cleanup costs, avoided liability costs and reduced weapons system maintenance and life cycle costs.

One reason SERDP has been so successful is the complementary role played by ESTCP, the Department's environmental test and evaluation program. SERDP and ESTCP are managed out of a single program office. ESTCP's mission is to transition technology out of the laboratory. It does this by demonstrating the technology in a real-world setting, such as a clean-up site on a military installation or at an aircraft maintenance depot. This "direct technology insertion" has proven key to getting regulators and end users to embrace new technology.

One area where SERDP and ESTCP have excelled is the development of technologies to detect unexploded ordnance (UXO). Current clean-up methods cannot discriminate between scrap metal and hazardous UXO; as a result, contractors must dig up hundreds of thousands of metal objects in order to identify and remove just a few pieces of UXO. Because this process is so labor-intensive, it is very expensive: the estimated cost to clean up UXO on known DoD sites is an eye-popping \$17 billion. However, ten years of investment by SERDP and ESTCP have yielded technologies that can discriminate between UXO and harmless metal objects with almost perfect reliability. This is a remarkable achievement and one that many clean-up experts thought was impossible. Based on estimates from the 2003 Defense Science Board Task Force on Unexploded Ordnance, implementation of reliable discrimination technologies can reduce DoD's projected cost for UXO cleanup by 75 percent—or up to \$12 billion.

ESTCP has recently funded live-site demonstrations to acquire the data needed to validate, gain regulatory approval for and fully transition these technologies into the field. We are proposing to accelerate these demonstrations so that the technology is ready by 2015, when the Services undertake major UXO clean-up efforts. Recognizing that the challenges go beyond technology, we are addressing other potential impediments to the deployment of new technology. We are talking with environmental regulators to gain their endorsement, working with contracting offices so that contracts allow for early adoption, and cooperating with industry to encourage embrace of the new technology.

The FY 2012 budget request includes \$66.4 million for SERDP and \$33.6 million for ESTCP for *environmental* technology demonstrations. (The budget request for ESTCP includes an additional \$30 million for *energy* technology demonstrations, as discussed in

section III above.) Of the \$33.6 million requested for ESTCP, \$7.5 million will go to support the accelerated program of UXO live-site demonstrations.

The overall budget request for Environmental Technology for FY 2012 is \$227 million. In addition to SERDP and ESTCP, this request includes funding for the Services' environmental research and development activities. The Services' investments focus on Service-unique environmental technology requirements and complement the larger SERDP and ESTCP investments, which address those issues that are common across the Services. SERDP and ESTCP work closely with the Services in order to coordinate and leverage these investments.

Compatible Development

Encroachment is a growing challenge to the military mission, particularly our test and training activities. I want to highlight two efforts which I spearhead that are designed to deal with this challenge.

Readiness and Environmental Protection Initiative

DoD's ability to conduct realistic live-fire training and weapons system testing is vital to preparing troops and the equipment they use for real-world combat. Sprawl, incompatible land use and other forms of encroachment put the Department's training and testing missions at risk and reduce military readiness. For example, lights from developments near installations reduce the effectiveness of night vision training, and land development that destroys endangered species habitat pushes those species onto less developed military lands, resulting in restrictions on testing and training.

A key tool for combating encroachment is the Readiness and Environmental Protection Initiative (REPI). Under REPI, the Department partners with conservation organizations and state and local governments to preserve buffer land around our installations and ranges. Through its unique cost-sharing partnerships, REPI has directly leveraged the Department's investments by two-to-one. The indirect benefits are even greater: by helping to preserve buffer land, the Department avoids much more costly alternatives, such as training workarounds and investments to replace existing testing capability. In the current real estate market, where property is more affordable and there are a great many willing sellers, REPI is a particularly good investment.

The President's FY 2012 budget requests \$54.2 million for REPI, an increase of \$15M over our FY 2011 request.

Renewable Energy Siting

Although most renewable energy projects are perfectly compatible with the military mission, in some cases, they can create a conflict. Until recently, the process through which DoD reviewed proposed projects and handled disputes was opaque, time-consuming, and ad hoc, and the resulting delays were costly for industry and for our

partners elsewhere in governments. Spurred in part by your direction in section 358 of the FY 2011 NDAA, we have moved aggressively to develop a timely, transparent review process and to pursue technological fixes that allow for compatible energy siting.

We have made rapid progress. Even before the President signed the NDAA into law, we had created the DoD Energy Siting Clearinghouse to provide a “one-stop shop” within the Department for developers and other government agencies. The Clearinghouse has conducted aggressive outreach to industry, other federal agencies, environmental advocacy groups, and state and local governments. Among other things, the Clearinghouse hosted a conference with key interagency stakeholders to analyze the backlog of renewable energy projects filed with the Federal Aviation Administration (FAA) and the Department of Interior’s Bureau of Land Management (BLM), focusing on protecting critical military mission requirements as we promote energy independence. We are also engaged in Interior's efforts to open public lands and the Outer Continental Shelf to renewable energy generation—ensuring that we do this in a way that preserves military testing, training and homeland defense capabilities.

At the same time, the Clearinghouse has worked with interagency partners on R&D to promote mission compatible renewable energy, with an emphasis on technology to mitigate the impacts of wind turbines on radars. The Department of Energy has been an enthusiastic collaborator, and we are planning to host an interagency field evaluation of existing mitigation technologies in the near future. Through the Interagency Policy Committee on the Air Domain, we are looking at options to accelerate the process for upgrading older surveillance radars and set the stage for long-term solutions.

Renewable energy is vital to America’s future security and economic vitality and it need not be incompatible with the preservation of the Department’s irreplaceable test and training ranges and its radar-based surveillance network. We are making great strides in learning how minimize the impacts of renewable energy projects on vital military missions. This effort will help give our nation a clean, reliable and secure energy future.

Conclusion

My office takes 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.

APPENDIX

KEY FACILITIES ENERGY AND WATER GOALS

There are four key statutory and regulatory goals related to installation's consumption of energy and water:

- 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 21 percent reduction by the end of 2012.
- 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 electricity consumed from all 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 12 percent by 2012.
- Reduce consumption of petroleum (gasoline and diesel) by non-tactical vehicles by 30 percent by 2020 [Executive Order 13514, October 2009].
- Reduce potable water consumption intensity by 2 percent per year, or 16 percent overall, by 2015 from the 2007 baseline.

DoD reduced its energy intensity by only 11.2 percent from 2005 to 2010, compared to the goal of 15 percent. A key factor has been the demands on the Army related both to the movement of troops and equipment to and from Afghanistan and Iraq and to the completion of the BRAC process (as Army closes some facilities and moves to others, the lights are on in two locations).

DoD increased its consumption of renewable energy by 4.1 percent, compared to the 2010 EPACT target of 5.0 percent. By contrast, we met the FY2007 NDAA goal (produce or procure 25 percent of electricity consumed from all renewable sources) by achieving 10.4 percent compared to the target of 10 percent.

With respect to consumption of petroleum by non-tactical vehicles, the Department fell short of the target: DoD achieved a 6.6 percent reduction in its petroleum use from the 2005 baseline, compared to the target of 10 percent. The Department continues to pursue replacement of non-tactical fleet vehicles with more efficient models, alternative fuel vehicles and hybrid electric vehicles to decrease petroleum fuel demand.

Finally, the Department far exceeded the 2010 goal for reducing the intensity of our potable water consumption. DoD reduced its potable water consumption intensity by 13 percent from 2007 to 2010, compared to the goal of 6 percent. From 2007 to 2009, we reduced the water consumption intensity of our facilities by 4.6 percent. This dramatic improvement is due to the combination of an aggressive program to detect leaks followed up by a program to repair them.