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**BY THE COMMITTEE**

**Statement of**

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**Performing the Duties of Assistant Secretary Of Defense**

**(Energy, Installations and Environment)**

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**Subcommittee on Readiness and Management Support**

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## **Introduction**

Chairman Ayotte, Ranking Member Kaine and distinguished members of the subcommittee: Thank you for the opportunity to present the President's Fiscal Year (FY) 2016 budget request for the Department of Defense programs supporting energy, installations, and the environment.

In my testimony, I will focus first on the budget request. As you will note, the Administration's budget includes \$8.4 billion for Military Construction (including family housing), and \$10.6 billion for Facility Sustainment and Recapitalization. These are both significant increases from last year, increases made possible because the total defense budget request is \$35 billion more than the Budget Control Act cap for Fiscal Year 2016. It allows a significant reduction in facilities risk from last year, but if we are compelled to return to the budget caps, we will undoubtedly need to accept more risk in facilities. As I have said in the past, facilities degrade more slowly than readiness, and in a constrained budget environment, it is responsible to take risk in facilities first.

My testimony will also address the environmental budget. This budget has been relatively stable, and we continue to show progress in both our compliance program, where we've seen a decrease in environmental violations, and in cleanup, where 82% of our 39,000 sites have reached Response Complete. We remain on track to meet our goals of 90% Response Complete in 2018, and 95% in 2021.

Given the merger between the Installations & Environment office and the Operational Energy Plans and Programs office into the new, combined Energy, Installations & Environment office, this testimony will also address both Operational and Facilities Energy budgets, though these are not as explicitly broken out in the budget request in the same way many of the facilities and environmental accounts are. I will address the Operational Energy Budget Certification in my testimony, though the formal certification report will follow separately.

In addition to budget, I will also highlight a handful of top priority issues – namely, the Administration's request for BRAC authority, European consolidation efforts, the status of the movement of Marines from Okinawa to Guam, an overview of our energy programs, and climate change.

## **Fiscal Year 2016 Budget Request – Military Construction and Family Housing**

The President's FY 2016 budget requests \$8.4 billion for the Military Construction (MilCon) and Family Housing Appropriation- an increase of approximately \$1.9 billion from the FY 2015 budget request (see Table 1 below). This increase recognizes the Department's need to invest in facilities that address critical mission requirements and life, health, and safety concerns, while acknowledging the constrained fiscal environment. In addition to new construction needed to bed-down forces returning from overseas bases, this funding will be used to restore and modernize enduring facilities, acquire new facilities where needed, and eliminate those that are excess or obsolete. The FY 2016 MilCon request (\$6.7 billion) includes projects in support of the strategic shift to the Asia-Pacific, projects needed to support the realignment of forces, and

projects to take care of our people and their families, such as unaccompanied personnel housing, medical treatment facilities, and schools.

Despite the slight increase in this year’s budget request, the DoD Components continue to take risk in the MilCon program in order to decrease risk in other operational and training budgets. While the Department’s FY 2016 budget request funds critical projects that sustain our warfighting and readiness postures, taking continued risk across our facilities inventory will degrade our facilities and result in the need for significant investment for their repair and replacement in the future. Our limited MilCon and Family Housing budget for FY 2016 leaves limited room for projects that would improve aging workplaces, and therefore, could adversely impact routine operations and the quality of life for our personnel.

**Table 1. MilCon and Family Housing Budget Request, FY 2015 versus FY 2016**

Category	FY 2015 Request (\$ Millions)	FY 2016 Request (\$ Millions)	Change from FY 2015	
			Funding (\$ Millions)	Percent
Military Construction	4,859	6,653	1,794	37%
Base Realignment and Closure	270	251	(19)	(7%)
Family Housing	1,191	1,413	222	19%
Chemical Demilitarization	39	0	(39)	(100%)
NATO Security Investment Program	200	120	(80)	(40%)
<b>TOTAL</b>	<b>6,559</b>	<b>8,437</b>	<b>1,878</b>	<b>29%</b>

### **Military Construction**

We are requesting \$6.7 billion in the military construction *account* (note the difference between that and the military construction *appropriation* which includes items like Base Realignment and Closure (BRAC) and Family Housing). While this represents a nearly 37 percent increase from our FY 2015 request, this level of funding is still significantly less than historic trends prior to the Budget Control Act. This FY 2016 military construction funding request addresses routine requirements for construction at enduring installations stateside and overseas, 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 as discussed immediately below.

First and foremost, our MilCon request supports the Department’s operational missions. MilCon is key to supporting forward deployed missions as well as implementing initiatives such as the Asia-Pacific rebalance, European Infrastructure Consolidation, and cyber mission effectiveness. Our FY 2016 budget request includes \$50 million for construction of an airlift ramp and taxiway at Agadez, Niger; \$90 million for construction of a pier replacement and ship maintenance support facility in Bahrain; and \$94 million for the second phase of a Joint Intelligence Analysis Complex Consolidation at Royal Air Force Croughton, United Kingdom. The budget request

also includes funding to support bed-down of new missions, such as \$72 million for three projects to support arrival of F-35C squadrons at Naval Air Station Lemoore, California; \$69 million for three projects to support arrival of F-35A squadrons at Nellis Air Force Base, Nevada; \$37 million for a KC-46A Depot Maintenance Dock at Tinker Air Force Base, Oklahoma; \$126 million for a Live-Fire Training Range Complex at Joint Region Marianas, Guam; \$221 million for two projects supporting an Aegis Ashore Missile Defense Complex at Redzikowo Base, Poland; \$37 million for Litoral Combat Ship Support Facilities at Naval Base San Diego, California; and \$86 million for a Joint Operations Center to support U.S. Cyber Command at Fort Meade, Maryland.

Second, our FY 2016 military construction budget request includes \$376 million to replace or modernize ten DoD Education Activity (DoDEA) schools that are in poor or failing physical condition, a reduction compared to the FY 2015 request of \$394.4 million. The projects included in our FY 2016 budget request, four of which are at enduring locations overseas, support the Department's plan to replace or recapitalize more than half of DoDEA's schools over the next several years, but at a slower pace to improve execution and to allow time for DoDEA to assess the impact of pending force structure changes. The recapitalized or renovated facilities, including a \$55 million replacement elementary school at West Point, New York, are intended to be models of sustainability and will provide a modern teaching environment for the children of our personnel.

Third, the FY 2016 budget request includes \$673 million for seven projects to upgrade our medical treatment and research facilities, to include \$122 million for a behavioral health/dental clinic at Schofield Barracks, Hawaii and \$124 million for replacement of a medical/dental clinic at Marine Corps Air Station Kaneohe Bay, Hawaii. The request also includes \$85 million for the fifth increment of the Rhine Ordnance Barracks Hospital Replacement, Germany; \$239 million for the seventh increment of the Fort Bliss Hospital Replacement, Texas; and \$62 million for the fourth increment of the Ambulatory Care Center at Joint Base San Antonio, Texas. Our FY 2016 request focuses on medical infrastructure projects that are crucial to ensure that we can deliver the quality healthcare our service members and their families deserve when stationed stateside and during overseas deployments.

One final note on the MilCon request - while the FY 2016 Overseas Contingency Operations (OCO) budget request includes \$789 million to continue the President's European Reassurance Initiative (ERI) to provide temporary support to bolster the security of our North Atlantic Treaty Organization allies and partner states in Europe, the request includes no ERI military construction funding.

### **Family and Unaccompanied Housing**

A principal priority of the Department is to support military personnel and their families and improve their quality of life by ensuring access to suitable, affordable housing. Service members are engaged in the front lines of protecting our national security and they deserve the best possible living and working conditions. Sustaining the quality of life of our people is crucial to recruitment, retention, readiness and morale.

Our FY 2016 budget request includes \$1.4 billion to fund construction, operation, and maintenance of government-owned and leased family housing worldwide as well as to provide services to assist military members in renting or buying private sector housing (see Table 2 below). Included in this request is \$61 million for the second phase of new construction family housing at Camp Walker, South Korea, and \$20 million for replacement family housing at Rock Island Arsenal, Illinois.

Most government-owned family housing is on enduring bases in foreign countries now that the Department has privatized the vast majority of our family housing in the United States. Our request does not include funding for oversight of privatized housing because we will utilize cost savings in FY 2015 to cover our FY 2016 expenses. However, we anticipate requesting funding for oversight of privatized housing in future budget requests. The requested FY 2016 funding will ensure that U.S. military personnel and their families continue to have suitable housing choices.

**Table 2. Family Housing Budget Request, FY 2015 versus FY 2016**

Category	FY 2015 Request (\$ Millions)	FY 2016 Request (\$ Millions)	Change from FY 2015	
			Funding (\$ Millions)	Percent
Family Housing Construction/Improvements	95	277	182	192%
Family Housing Operations & Maintenance	1,094	1,136	42	4%
Family Housing Improvement Fund	2	0	(2)	(100%)
<b>TOTAL</b>	<b>1,191</b>	<b>1,413</b>	<b>222</b>	<b>19%</b>

The Department also continues to encourage the modernization of Unaccompanied Personnel Housing (UPH) to improve privacy and provide greater amenities. In recent years, we have heavily invested in UPH to support initiatives such as BRAC, global restationing, force structure modernization, and the Navy's Homeport Ashore initiative. The FY 2016 MilCon budget request includes \$360 million for construction and renovation projects that will improve living conditions for Active Duty trainees and unaccompanied personnel, to include \$68 million for Marine Corps bachelor enlisted quarters at Kaneohe Bay, Hawaii, and \$71 million for an Air Force dormitory at Joint Base San Antonio, Texas.

The Military Services completed its Military Housing Privatization Initiative (MHPI) award phase in FY 2013 with award of the final three Air Force MHPI projects, bringing the total privatized inventory to about 205,000 housing units. The new challenge will be to manage the government's interests in these privatized projects to ensure they continue to provide quality housing for their expected lifespan.

Families choosing to live in privatized housing typically pay their Basic Allowance for Housing (BAH) as rent which serves as the primary revenue stream for the MHPI project. BAH rates in

2015 have been updated to incorporate two changes to the computation BAH. First, renter's insurance was eliminated from the 2015 Basic Allowance for Housing rate computation. Second, based on recent amendment of section 403(b)(3) of title 37, United States Code, by the Fiscal Year 2015 National Defense Authorization Act, a member cost-sharing element (i.e., out-of-pocket expense) of 1 percent of the national average monthly cost of adequate housing was introduced into the housing allowance rates. As a result, the Military Departments will review their housing projects and implement necessary changes to the rental arrangements to ensure the continued quality of privatized housing, and to ensure that residents of privatized housing bear out-of-pocket expenses similar to military families living on the local economy.

### **Facilities Sustainment and Recapitalization**

In addition to new construction, the Department invests significant funds in maintenance and repair of our existing facilities. Sustainment represents the Department's single most important investment in the condition of its facilities. It includes regularly scheduled maintenance and repair or replacement of facility components - the periodic, predictable investments that should be made across the service life of a facility to slow its deterioration, optimize the Department's investment, and save resources over the long term. Proper sustainment retards deterioration, maintains safety, preserves performance over the life of a facility, and helps improve the productivity and quality of life of our personnel.

The accounts that fund these activities have taken significant cuts in recent years. Recognizing that too much risk has been endured in maintaining their facilities, the Military Departments increased Facility Sustainment commitments in FY 2016. The FY 2016 DoD budget request includes \$6.4 billion of Operations and Maintenance (O&M) funding for sustainment of our real property, representing 81% of the requirement based on the Facilities Sustainment Model (FSM).

**Table 3. Sustainment and Recapitalization Budget Request, FY 2015 versus FY 2016**

Category	FY 2015 Request (\$ Millions)	FY 2016 Request (\$ Millions)	Change from FY 2015	
			Funding (\$ Millions)	Percent
Sustainment (O&M)	6,429	8,022	1,593	25%
Recapitalization (O&M)	1,616	2,563	946	59%
<b>TOTAL</b>	<b>8,046</b>	<b>10,585</b>	<b>2,539</b>	<b>32%</b>

For FY 2016, the Department's budget request includes nearly \$8.0 billion for sustainment and \$2.6 billion for recapitalization (see Table 3 above) in Operations & Maintenance funding. The combined level of sustainment and recapitalization funding (\$10.6 billion) reflects a 32 percent increase from the FY 2015 President's Budget (PB) request (\$8.0 billion), but still reflects an acceptance of significant risk in DoD facilities. In fact, the request supports average DoD-wide sustainment funding level that equates to 81% of the FSM requirement as compared to the Department's goal to fund sustainment at 90% of modeled requirements.

Recent and ongoing budget constraints have limited investment in facilities sustainment and recapitalization to the point that 24 percent of the Department's facility inventory is in "poor" condition (Facility Condition Index (FCI) between 60 and 79 percent) and another 6.5 percent is in "failing" condition (FCI below 60 percent) based on recent facility condition assessment data. The Department ultimately will be faced with larger bills in the out-years to restore or replace facilities that deteriorate prematurely due to funding constraints.

In an effort to better track – and limit – the risk we were accepting in our facilities, we issued policy in FY 2014 that reiterates DoD's goal to fund sustainment programs at 90 percent or higher of the Facility Sustainment Model requirement; establishes 80 percent as the minimum inventory-wide Facility Condition Index goal for each Component to meet annually for the facilities they manage; and directs Components to develop mitigation plans for their failing facilities (those with an FCI below 60 percent) to ensure that we have a strategy to improve the condition of our real property inventory in the coming years. Component mitigation plans could address failing facility conditions through repair, replacement, mothballing, or demolition. To complement these goals, we've issued policy to standardize inspections and ensure that all of the Services are measuring their facility condition the same way.

### **Fiscal Year 2016 Budget Request – Environmental Programs**

The Department has long made it a priority to protect 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 to sustain military readiness. To achieve this objective, the Department has made a commitment to continuous improvement, pursuit of greater efficiency and adoption of new technology. In the President's FY 2016 budget, we are requesting \$3.4 billion to continue the legacy of excellence in our environmental programs.

The table below outlines the entirety of the DoD's environmental program, but I would like to highlight a few key elements where we are demonstrating significant progress – specifically, our environmental restoration program, our efforts to leverage technology to reduce the cost of cleanup, and the Readiness and Environmental Protection Integration (REPI) program.

**Table 4: Environmental Program Budget Request, FY 2016 versus FY 2015**

Program	FY 2015 Request (\$Millions)	FY 2016 Request (\$Millions)	Change from FY 2015	
			Funding (\$Millions)	Percent
Environmental Restoration	1,105	1,108	3	0.3%
Environmental Compliance	1,458	1,389	(69)	(4.7%)
Environmental Conservation	381	389	8	2.1%
Pollution Prevention	119	102	(17)	(14.3%)
Environmental Technology	172	200	28	16.3%
BRAC Environmental	264	217	(47)	(17.8%)
<b>TOTAL</b>	<b>3,499</b>	<b>3,405</b>	<b>(94)</b>	<b>(2.7%)</b>

**Environmental Restoration**

We are requesting \$1.3 billion to continue cleanup efforts at remaining Installation Restoration Program (IRP – focused on cleanup of hazardous substances, pollutants, and contaminants) and Military Munitions Response Program (MMRP – focused on the removal of unexploded ordnance and discarded munitions) sites. This includes \$1.1 billion for "Environmental Restoration," which encompasses active installations and Formerly Used Defense Sites (FUDS) locations and \$217 million for "BRAC Environmental." While the amount of BRAC Environmental funds requested is nearly 18% less than the 2015 request, this amount will be augmented by \$135 million of land sale revenue and prior year, unobligated funds. These funds coupled with the \$217 million request brings the total amount of BRAC Environmental funding to \$352 million DoD will invest in FY16, a 33% increase over the FY 2015 request. These investments help to ensure DoD continues to make steady progress towards our program goals. We remain engaged with the Military Departments to ensure they are executing plans to spend all remaining unobligated balances.



**Table 5: Progress Toward Cleanup Goals**

Goal: Achieve Response Complete at 90% and 95% of Active and BRAC IRP and MMRP sites, and FUDS IRP sites, by FY2018 and FY2021, respectively			
	Status as of the end of FY 2014	Projected Status at the end of FY 2018	Projected Status at the end of FY 2021
Army	89%	96%	97%
Navy	78%	88%	94%
Air Force	76%	90%	95%
DLA	88%	96%	96%
FUDS	79%	90%	96%
<b>Total</b>	<b>82%</b>	<b>92%</b>	<b>96%</b>

By the end of 2014, the Department, in cooperation with state agencies and the Environmental Protection Agency, completed cleanup activities at 82 percent of Active and BRAC IRP and MMRP sites, and FUDS IRP sites, and is now monitoring the results. During FY 2014 alone, the Department completed cleanup at over 1,000 sites. Of the roughly 39,000 restoration sites, almost 31,500 are now in monitoring status or cleanup completed. We are currently on track to meet our program goals – anticipating complete cleanup at 96 percent of Active and BRAC IRP and MMRP sites, and FUDS IRP sites, by the end of 2021.

Our focus remains on continuous improvement in the restoration program: minimizing overhead; adopting new technologies to reduce cost and accelerate cleanup; refining and standardizing our cost estimating; and improving our relationships with State regulators through increased dialogue. All of these initiatives help ensure that we make the best use of our available resources to complete cleanup.

Note in particular that we are cleaning up sites on our active installations in parallel with those on bases closed in previous BRAC rounds – cleanup is not something that DoD pursues only when a base is closed. In fact, the significant progress we have made over the last 20 years cleaning up contaminated sites on active DoD installations is expected to reduce the residual environmental liability in the disposition of our property made excess through the BRAC process or other efforts.

**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 remediation sites, installations, ranges, depots and other industrial facilities. These same technologies are also now widely used at non-Defense sites helping the nation as a whole.

While the FY 2016 budget request for Environmental Technology overall is \$200 million, our core efforts are conducted and coordinated through two key programs - the Strategic

Environmental Research and Development Program (SERDP - focused on basic research) and the Environmental Security Technology Certification Program (ESTCP - which validates more mature technologies to transition them to widespread use). The FY 2016 budget request includes \$66 million for SERDP and \$33 million for ESTCP for environmental technology demonstrations, with an additional \$20 million requested specifically for energy technology demonstrations.

These programs have already achieved demonstrable results and have the potential to reduce the environmental liability and costs of the Department - developing new ways of treating groundwater contamination, reducing the life-cycle costs of multiple weapons systems, and improving natural resource management.

This past year, the Air Force has deployed a full scale robotic laser depainting system at Hill AFB that is the culmination of a substantial, multi-year investment by SERDP, ESTCP, and the Air Force Research Laboratory. The system is currently operational and offers a more environmentally sustainable method to perform essential maintenance on the F-16, decreasing processing time from seven days to three and increasing the mission availability of the aircraft. Additionally, the new process reduces the amount of hazardous waste generated from 2000 pounds per F-16 aircraft using previous processes to less than one pound using the new system – all while generating approximately 70% savings in per unit costs and decreasing associated labor from 400 hours per aircraft to just 100 hours. A second system is planned for the C-130, and similar results are expected. This technology truly represents a win-win for the environment and the mission.

Looking ahead, our environmental technology investments are focused on the Department's evolving requirements. This year, we expect to complete the demonstrations of revolutionary new technology that allows us to discriminate between hazardous unexploded ordnance and harmless scrap metal without the need to dig up every object and we're moving out aggressively to transition the technology to everyday use. We will continue our investments in technologies to address the challenges of contaminated groundwater sites where no good technical solutions are currently available, and we'll seek out innovative ways to address munitions in the underwater environment. Lastly, we'll continue our efforts to develop the science and tools needed to meet the Department's obligations to assess and adapt to climate change, and we'll continue the important work of reducing future liability and life-cycle costs by eliminating toxic and hazardous materials from our production and maintenance processes.

### **Environmental Conservation and Compatible Development**

To maintain access to the land, water and airspace needed to support our mission needs, the Department continues to successfully manage the natural resources entrusted to us – including protecting the many threatened and endangered species found on our lands. DoD manages approximately 25 million acres containing many high-quality and unique habitats that provide food and shelter for over 520 species-at-risk and over 400 that are federally listed as threatened or endangered species. That is 9 times more species per acre than the Bureau of Land Management, 6 times more per acre than the United States Fish and Wildlife Service (USFWS), 4.5 times more per acre than the Forest Service, and 3.5 times more per acre than the National

Park Service. A surprising number of rare species are found only on military lands – including more than ten listed species and at least 75 species-at-risk.

The FY 2016 budget request for Conservation is \$389 million. The Department invests these funds to manage its imperiled species as well as all its natural resources in an effort to sustain the high quality lands our service personnel need for testing, training and operational activities, and to maximize the flexibility our servicemen and women need to effectively use those lands. Species endangerment and habitat degradation can have direct mission-restriction impacts. That is one reason we work hard to prevent species from becoming listed, or from impacting our ability to test and train if they do become listed.

As a result of multiple law suits, the United States Fish and Wildlife Service (USFWS) entered into a court-approved agreement in 2011 that requires USFWS to make decisions about whether to list 251 species that are “candidates” for listing as threatened or endangered under the Endangered Species Act by 2016. Of the 125 found on or adjacent to military lands, the Department determined 37 of them – if USFWS listed and designated critical habitat on DoD lands – could have significant or moderate potential to impact military readiness at locations such as Yakima Training Center and Joint Base Lewis-McChord (JBLM). Furthermore, 12 of those 37 species were identified to have the greatest potential to significantly impact military actions. So far, USFWS has listed 119 of those 251 species, at least 47 of which are on our lands. To minimize actual and potential mission impacts, these installations have increased monitoring for these species, incorporated appropriate management strategies into their Integrated Natural Resource Management Plans, and – when needed – are working with USFWS to avoid critical habitat designations and to ensure that listed species conservation is consistent with military readiness needs.

Our focus has been on getting ahead of any future listings. In 2011, I tasked the Military Departments to ensure our management plans adequately address all listed and candidate species to avoid critical habitat designations. All but two of our plans now adequately address these species, and we have successfully avoided critical habitat for all these candidate species where USFWS has made listing decisions.

We make investments across our enterprise focused on threatened or endangered species, wetland protection, and protecting other natural, cultural and historical resources, but we cannot continue to manage these resources in isolation. Instead, we are working with partners across the fence line to expand our conservation activities off-installation and promote compatible land uses around our installations and ranges. I want to highlight one particularly successful and innovative program that is advancing these innovative partnerships - the Readiness and Environmental Protection Integration (REPI) Program. Included within the \$389 million for Conservation, \$60.3 million is directed to the REPI Program. The REPI Program is a cost-effective tool to protect the nation’s existing training, testing, and operational capabilities at a time of decreasing resources. In the last 12 years, REPI partnerships have protected more than 356,000 acres of land around 80 installations in 28 states. In addition to the tangible benefits to testing, training and operations, these efforts have resulted in significant contributions to biodiversity and recovery actions supporting threatened, endangered and candidate species.

Under REPI, the Department partners with conservation organizations and state and local governments to preserve buffer land and sensitive habitat near installations and ranges. Preserving these areas allows the Department to avoid much more costly alternatives such as workarounds, restricted or unrealistic training approaches, or investments to replace existing test and training capability. Simultaneously, these efforts ease the on-installation species management burden and reduce the possibility of restricted activities, ultimately providing more flexibility for commanders to execute- their missions.

The REPI Program supports the warfighter and protects the taxpayer because it multiplies the Department's investments through unique cost-sharing agreements. Even in these difficult economic times, REPI is able to directly leverage the Department's investments at least one-to-one with those of our partners, effectively securing critical buffers around our installations for half-price.

In addition, DoD, along with the Departments of the Interior and Agriculture, announced the Sentinel Landscapes Partnership to protect large landscapes where conservation, working lands, and national defense interests converge — places defined as Sentinel Landscapes. The Sentinel Landscapes Partnership further strengthens interagency coordination and provides taxpayers with the greatest leverage of their funds by aligning federal programs to advance the mutually-beneficial goals of each agency. The pilot Sentinel Landscape project at Joint Base Lewis-McChord (JBLM) helped USFWS avoid listing a butterfly species in Washington, Oregon, and California, citing the “high level of protection against further losses of habitat or populations” from investments made by Joint Base Lewis-McChord's REPI partnership on private prairie lands in the region. These actions allow significant maneuver areas to remain available and unconstrained for active and intense military use at JBLM.

### **Fiscal Year 2016 Budget Request – Energy Programs**

Unlike the Department's Military Construction and Environmental Remediation programs, where the budget request includes specific line items, our energy programs are subsumed into other accounts. The following sections describe the Energy portion of the budget request. Further discussion of energy follows in the highlighted issues section.

#### **Operational Energy**

There is no explicit request for Operational Energy. Fuel is not separately budgeted, but instead is part of multiple operational accounts. We can track previous years' fuel expenditures, and know that we spent approximately \$14 billion on fuel in FY 2014. However, investments in how the Department uses operational energy are spread across multiple appropriations, and are detailed in the Department's annual budget certification report, which assesses the alignment of the President's Budget with the goals of the DoD Operational Energy Strategy.

The Department of Defense budgeted approximately \$1.6 billion in Fiscal Year (FY) 2016 and \$10.9 billion over the five-year Future Defense Plan (FYDP) on operational energy initiatives. Although the FY 2016 budget request maintains approximately the same funding levels as FY

2015, the overall FY 2016-20 FYDP funding includes an increase of approximately \$2 billion over FY 2015-19 FYDP funding. The increase largely results from increases in Army and Air Force operational energy funding over the FYDP.

Approximately 92 percent of Department spending on operational energy initiatives focuses on reducing demand, while the remainder addresses energy supplies and adapting the future force. Specific to energy demand, the Services are investing in an array of innovations designed to improve the endurance, resilience, and agility of Joint operations. For instance, the Army is investing in vehicle power train technology, improved batteries and solar chargers for individual Soldier equipment, and more efficient generators. The Navy is pursuing hybrid electric propulsion for the DDG-51 class destroyers that will increase time on station, and aviation simulator upgrades that will allow more training to occur in simulators, reducing the amount of fuel and aircraft maintenance needed to support the Naval Flight Hour program. Marine Corps investments include tactical vehicle fuel efficiency and improvements in expeditionary base camp initiatives. The Air Force is pursuing a range of improved operational practices for the airlift and tanker fleet, as well as mid-life engine upgrades (KC-135 Engine Upgrade) and wholly new propulsion programs (Adaptive Engine Technology Development) that increase range, payload, and/or endurance.

The full certification report, which will be provided to Congress in the near future, will provide a more comprehensive assessment of the alignment of these operational energy initiatives in the FY 2016 President's Budget with the goals of the Operational Energy Strategy.

### **Facilities Energy**

As with Operational Energy, there is no explicit request for Facilities Energy – utilities expenditures are included in the Base Operations O&M request. We can track actual expenditures, and we spent \$4.2B on Facilities Energy in FY 2014. Energy efficiency initiatives are found either as part of construction or sustainment budgets. Moreover, the preponderance of renewable energy initiatives that the Services pursue involve third party investments and power purchase agreements that result in electricity bills that are less than or equal to historical prices.

The Department's FY 2016 budget request includes approximately \$700 million for investments in conservation and energy efficiency, most of which will be directed to existing buildings. The majority (\$550 million) is in the Military Components' operations and maintenance accounts, to be used for sustainment and recapitalization projects. Such projects typically involve retrofits to incorporate improved lighting, high-efficiency HVAC systems, double-pane windows, energy management control systems, and new roofs. The remainder (\$150 million) is for the Energy Conservation Investment Program (ECIP), a Military Construction account used to implement energy efficiency, water conservation and renewable energy projects. Each individual ECIP project has a positive payback (i.e. Savings to Investment Ratio (SIR) > 1.0) and the overall program has a combined SIR greater than 2.0. This means for every dollar we invest in ECIP, we generate more than two dollars in savings.

The Military Component investments include activities that would be considered regular maintenance and budgeted within the Operation and Maintenance accounts for Facilities Sustainment, Restoration, and Maintenance activities. The risk that has been accepted in those

accounts will not only result in fewer energy projects, but failing to perform proper maintenance on our buildings will without question have a negative impact on our energy usage. In plain terms, upgrades to air conditioning systems will not reduce energy usage as projected if the roof is leaking or the windows are broken. Sequestration and BCA budget cuts to the Department's facilities energy program have negatively impacted the DoD's ability to meet mandated energy intensity reduction goals. The DoD projects the Department will catch up and begin meeting its energy intensity reduction goals in FY 2019.

In addition to retrofitting existing buildings, we continue to drive efficiency in our new construction. We are implementing a new construction standard for high-performance, sustainable buildings issued by my office last year, which will govern all new construction, major renovations, and leased space acquisition. This new standard, which incorporates the most cost effective elements of commercial standards like ASHRAE 189.1, will accelerate DoD's move toward efficient, sustainable facilities that cost less to own and operate, leave a smaller environmental footprint, and improve employee productivity.

## **Highlighted Issues**

### **Base Realignment and Closure**

Given the state of the budget and the fact that we demonstrated we can save money by closing and realigning facilities in Europe, the Administration is once again requesting the authority from Congress to conduct a BRAC round.

Many members of Congress have stated that the Government as a whole could more efficiently use its resources. We absolutely agree. BRAC is an objective, proven, and effective means of doing just that. The Deputy Secretary, the official responsible for the efficient management of the Department, has been clear on this. Last fall he said “[The] first place we should look at is our basing infrastructure.” He went on to talk about how large private companies would not retain excess capacity. Reiterating the need for BRAC, he said; “in this time of constrained resources, I just don't understand why we are hamstringing ourselves. [M]aintaining that extra capacity is a big problem for us because it is wasteful spending, period. It is the worst type of bloat.”

Getting at this bloat is why the goal for BRAC remains focused on efficiency and savings. We believe the opportunity for greater efficiencies is clear, based on three basic facts that have not changed over the last year:

- In 2004, DoD conducted a capacity assessment that indicated it had 24% aggregate excess capacity;
- In BRAC 2005, the Department reduced only 3.4% of its infrastructure, as measured in Plant Replacement Value – far short of the aggregate excess indicated in the 2004 study;

- Force structure reductions subsequent to that analysis – particularly Army personnel (from 570,000 to 450,000 or lower), Marine Corps personnel (from 202,000 to 182,000 or lower) and Air Force force structure (reduced by 500 aircraft) – point to the presence of additional excess.

A new BRAC round will be different than BRAC 2005, where we incurred significant costs by forwarding recommendations that did not promise significant savings. That said, in BRAC 2005, we also included many recommendations that returned the initial investment in less than 7 years. These “efficiency” recommendations cost \$6 billion and resulted in \$3 billion in annual savings. (The “transformation” recommendations cost \$29 billion and return \$1 billion in annual savings.)

We project that a new efficiency-focused BRAC round will save about \$2 billion a year after implementation with costs and savings during the six year implementation being a wash at approximately \$6 billion. Our projection is based on the efficiency rounds of the 1990s.

In addition to being a proven process that yields savings, BRAC has several advantages that we have outlined before in our testimony. I want to highlight a few of these:

- BRAC is comprehensive and thorough - all installations are analyzed using certified data aligned against the strategic imperatives detailed in the 20-year force structure plan
- The BRAC process is auditable and logical which enables the Commission to conduct an independent review informed by their own analysis and testimony of affected communities and elected officials
- The Commission has the last say on the Department’s recommendations - being fully empowered to alter, reject, or add recommendations
- The BRAC process has an “All or None” construct which prevents the President and Congress from picking and choosing among the Commission’s recommendations; thereby insulating BRAC from politics
- The BRAC process imposes a legal obligation on the Department to close and realign installations as recommended by the Commission by a date certain; thereby facilitating economic reuse planning by impacted communities; and grants the Department the authorities needed to satisfy that legal obligation.

While we are certainly open to some changes to the legislatively designed BRAC process that has remained essentially the same for each of the last four BRAC rounds, we should be careful about altering the fundamental principles of the process, particularly those that I outlined above.

For example, Congressman Adam Smith circulated an amended version of the BRAC authorization last year, proposing several changes to the BRAC process. His bill required a certification that the new round would primarily focus on eliminating excess infrastructure; it required emphasis on the cost criteria as well as military value; it required all recommendations to

be completed more quickly – within five years rather than six; and it required master plans that would constrain the execution of recommendations and limit cost growth. Taken together, the intent is clear: the Smith proposal is designed to create cost and business case constraints on the BRAC process from the outset – unfortunately while several aspects of that proposal would fundamentally alter key aspects of what makes BRAC work: the priority given to military value; insulation from politics; and the legal obligation to implement the recommendations together with the authorities needed to satisfy that legal obligation – the proposal advances a constructive discussion of BRAC authorization.

While not in the context of BRAC, recent legislation authorizing the Department to proceed with the relocation of Marines to Guam imposed a cost cap on the overall program in an effort to underscore cost consciousness and limit the Department’s fiscal exposure.

We would welcome discussion on mechanisms to limit cost and emphasize savings in future BRAC rounds. Ultimately, we recognize the reality that no matter how many times the Administration asserts that a future BRAC round will be about cost savings, Congress may want more than just our assurance.

Whatever changes we discuss, the key is maintaining the essence of the BRAC process: treating all bases equally, all or none review by both the President and Congress, an independent Commission, and a clear legal obligation to implement all of the recommendations in a time certain together with all the authorities needed to accomplish implementation (specifically MILCON).

## **European Infrastructure Consolidation**

Past and ongoing force structure changes, a changing security environment, and our tough fiscal climate provided the Department a catalyst to undertake a comprehensive review of the infrastructure requirements necessary to support U.S. forces and their missions in and around Europe. The actions resulting from this comprehensive review of our European infrastructure will allow us to create long-term savings by eliminating excess infrastructure without reducing our operational capabilities. In other words, operationally we will continue to do everything we currently do – but at a lower cost.

The Department has been reducing its European footprint since the end of the Cold War. Generally, infrastructure reductions have been proportional to force structure reductions, but prior to our European Infrastructure Consolidation (EIC) effort we hadn’t taken a holistic, joint review of our European infrastructure. In response to our recent requests for Base Realignment and Closure (BRAC) authority, Congress made it clear that it wanted DoD to do so.

To analyze our European infrastructure we used a process very similar to the proven U.S. BRAC process. We looked at capacity, requirements, military value, cost, and at the diplomatic dynamics involved with each action. As we consolidate our footprint, the infrastructure remaining in place will continue to support our operational requirements and strategic commitments, but we will not need as many support personnel (military, civilian, and host nation employees) to maintain a reduced infrastructure. We did not contemplate changes that reduced



operational force structure or warfighting capability - that was a fundamental constraint of the analysis.

The largest action resulting from the EIC analysis is our return of RAF Mildenhall to the United Kingdom. Approximately 3,200 U.S. personnel from RAF Mildenhall will be re-stationed elsewhere. This move will be partially offset by the addition of about 1,200 personnel that will support the F-35s being stationed at nearby RAF Lakenheath. Both of these events will occur in the 2018-2021 timeframe.

Including the initial adjustments announced last April and the final actions announced in January, the Department will realize more than \$500 million in annual recurring savings once all actions are fully implemented – all while maintaining the same operational capability. This is in addition to the more than \$600 million in annual savings resulting from previously announced Army divestitures of Bamberg and Schweinfurt that were validated through the EIC process - divestitures directly associated with the recent force structure reductions in Europe.

Although detailed implementation planning is still underway, initial estimates indicate these actions will require approximately \$800 million to construct facilities at receiving sites. The vast majority of these construction requirements support divesting RAF Mildenhall (construction likely beginning in FY17) and consolidation of our joint intelligence analysis facilities at RAF Croughton, with \$93 million for the second of three phases included in this year's budget request.

These recommendations will be executed over the next several years, but that does not mean that everything will remain static in Europe while these changes occur. There were consolidations made before EIC and there will undoubtedly be future basing actions. However, the holistic review we conducted over the last two years allows us to redirect resources currently supporting unneeded infrastructure and apply them to higher priorities, thus strengthening our posture in Europe.

Although we continually seek efficiencies as we manage installations worldwide, the Department does not conduct this degree of comprehensive analyses of its infrastructure on a regular basis. That's one of the reasons we have requested BRAC authority from Congress to do a review of our U.S. installations. In this fiscal environment it would be irresponsible of us not to look for such savings.

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

The movement of thousands of Marines from Okinawa (and elsewhere) to Guam is one of the most significant re-basing action in recent years. We appreciate Congress' support in lifting restrictions on the relocation. Removal of these restrictions will allow us to move forward on this essential component of our rebalance to the Asia-Pacific region, resulting in a more geographically dispersed, operationally resilient, and politically sustainable posture in the area. As a U.S. territory, Guam offers strategic advantages and operational capabilities that are unique in the region. Presence in Guam is a force multiplier that contributes to a force posture that reassures allies and partners and deters aggression.

We understand Congress' concerns regarding both the cost and feasibility of the previous plan. Now, after much effort, we have a unified position on an executable plan. It is affordable, has fewer effects on Guam (peak population, power demand, and water demand are all reduced significantly), and is de-linked from progress on the Futenma Replacement Facility on Okinawa, yet preserves Japan's commitment to fund a substantial portion of the relocation. The new plan stations a smaller and more rotational force on Guam (~5,000 Marines/1,300 dependents) leaving ~11,500 Marines on Okinawa. The new plan, similar to the previous plan, requires Japan to contribute \$3.1 billion (all in cash) of the estimated \$8.7 billion total cost (in FY 2012\$).

In addition to the \$3.1 billion the Government of Japan has committed to construction on Guam, it is committing approximately \$12 billion to relocation efforts on Okinawa, including approximately \$7-8 billion for Okinawa consolidation and approximately \$4-5 billion for the Camp Schwab replacement for Marine Corps Air Station Futenma.

The Department has begun executing the Guam Master Plan in earnest and we expect only minor adjustments going forward. The Department plans to execute more than half a billion dollars of combined U.S. and Japanese funds in FY 2016. Specifically, in FY 2016, the Department is requesting \$126 million for the Known Distance Live-Fire Training Range at the Northwest Field of Andersen. We appreciate the FY 2015 authorization and appropriation of \$50.7 million for construction of Ground Support Equipment shops and Marine Wing Support Squadron Facilities at Andersen's North Ramp.

The relocation effort will reach a critical milestone in 2015, as the Department will complete the Supplemental Environmental Impact Statement (SEIS) associated with the modified plan and issue a Record of Decision. That document will reflect the significantly reduced strain that will be imposed on Guam as a result of a much smaller – and much slower – transition.

The long-term effects of the earlier plan's greater number of Marines and their families, larger footprint, need for additional land in the vicinity of the culturally important Pagat Cave (for the live - fire range), and the large number of imported workers necessary to meet the 2014 construction deadline fueled opposition. The new plan addresses most of these concerns through a smaller, more rotational number of Marines with less effect on the island; no requirement for additional land; a "preferred alternative" for the live-fire range at existing Andersen Air Force Base (AAFB) property; and a longer timeline needing far fewer imported workers. Additionally, in August 2014, the Department of Navy revised its planning to take advantage of existing, but underutilized, family housing at AAFB that needs recapitalization – a more cost- effective joint USMC/Air Force solution that further reduces our planned footprint.

The table below from the SEIS highlights some of the key differences between the original and revised plans:

Key Differences Between 2010 Final EIS and 2015 Final SEIS		
2010 Final EIS		2015 Draft SEIS
Approximately 8,600 Marines and 9,000 dependents relocating over 5 years	Relocated Population	Approximately 5,000 Marines and 1,300 dependents relocating over 12 years
7-year intense construction boom followed by sharp decline	Construction Period	13-years of moderate construction activity with gradual phase out
More than 79,000 new Guam Residents at peak	Peak Population Increase	Less than 10,000 new Guam residents at peak
More than 33,000 additional Guam residents	Steady State Population Increase	Approximately 7,400 additional Guam residents
2,580 acres at Finegayan preferred alternative	Project Area: Cantonment	1,723 acres at Finegayan/AAFB Preferred alternative
Acquisition of 688 acres of non-federal land Finegayan preferred alternative	Land Acquisition: Cantonment	No land acquisition at Finegayan/AAFB preferred alternative
5,529 acres for Route 15 Preferred alternative (4,439 acres) in SDZs, mostly over ocean)	Project Area: LFTRC	3,957 ACRES FOR Northwest Field Preferred alternative (3,701 acres in SDZs, mostly over ocean)
Acquisition of more than 1,000 acres of non-federal land at Route 15 preferred alternative	Land Acquisition: LFTRC	No land acquisition at Northwest Field preferred alternative
20 megawatts	Power Demand	5.7 megawatts
5.82 million gallons/day	Potable Water Demand	1.7 million gallons/day
2.6 million gallons/day	Wastewater Generation	1.2 million gallons/day
165,600 pounds/day	Solid Waste Generation	54,250 pounds/day
4 alternative sites in EIS analysis, all in same vicinity	EIS Alternatives: Cantonment	5 alternative sites in 3 different areas on Guam
2 alternative sites in EIS analysis, Both in same vicinity	Solid Waste Generation	5 alternative sites in 3 different areas on Guam

In parallel with the effort on the SEIS, the Department called a formal meeting of the Economic Adjustment Committee on July 29, 2014 to begin an assessment of “outside-the-fence”

requirements. The EAC's work is important as the earlier plan required significant investment due to the build-up's effects on Guam's fragile infrastructure. Nearly \$1.3 billion was previously identified in water and wastewater investments following the Navy's 2010 Record of Decision. Japan was to provide \$740 million in financing for these investments with the Department providing the balance.

However, because the new plan significantly reduces the effect on Guam's infrastructure and because Guam itself has upgraded some of its infrastructure, "outside-the-fence" requirements are expected to be significantly less. At its formal meeting on July 29, 2014, the EAC empowered teams of member agencies to identify required actions, their costs, and a timeline for outside-the-fence investments for those requirements specifically identified in the Navy's Final SEIS as being necessary to mitigate effects on the Territory. The plans and reports from these efforts will comprise the content for the final 2014 NDAA Section 2822 report (the "EAC Implementation Plan") to Congress. The EAC Implementation Plan is to be issued no later than the Department of the Navy's Record of Decision later this year.

We understand the concerns about spending funds for "outside-the-fence" projects, but the Department intends to seek funding only for those projects required by the SEIS to address impacts of the build-up. The President's FY 2016 budget requests an additional \$20.0 million for work necessary to repair Guam's civilian water and wastewater infrastructure and remedy deficiencies that could affect the health of DoD personnel. This effort is aligned with the water and wastewater investments identified as part of the Guam SEIS and the parallel EAC analysis. A more detailed – and complete – cost estimate will be included in our Report to Congress later this year.

## **Operational and Facilities Energy**

### *Merger of the Energy, Installations, and Environment Organizations*

In the FY 2015 National Defense Authorization Act, Congress directed the merger of the Assistant Secretary of Defense for Operational Energy Plans and Programs and the Deputy Under Secretary of Defense for Installations and Environment, creating a new Assistant Secretary of Defense for Energy, Installations and Environment, mirroring the organizational structure of the Services.

Without question, the operational and facilities facets of the Department's energy programs have much in common. First, they principally focus on the ability of the Department to carry out its missions. Both at installations and in combat platforms, energy is a critical resource and vulnerability across the full range of military operations. As an enabler, energy availability and resilience define the capabilities of weapons platforms, facilities and equipment. In addition, energy remains a substantial expense that competes with other investments in people and equipment. The drive to protect taxpayer dollars, especially in this budget environment, compels us to pursue cost-effective measures that increase energy efficiency and reduce our cost of operations.

The management strategies are similar also. Both heavily emphasize energy efficiency and reduction in demand, but also include recognition of the need to diversify supply. Energy security is a common theme, and while that means different things to different people, here it means the need for assured access to energy, during both combat and day-to-day operations. Finally, they look to the future and note the important role that technology investments play in setting the groundwork for the future force.

While there are many similarities in approach, fuels, the dominant manifestation of operational energy, and electricity, the primary medium of facilities energy, are fundamentally different and involve very different communities and programs within the Department of Defense. I'd like to highlight a few topics in each area.

### *Operational Energy*

Within the operational energy portfolio, most of our efforts to date reflected the imperatives of operations in Afghanistan and Iraq, and focused on mitigating the risks of supplying energy to distributed contingency bases in an environment characterized by desert conditions and irregular adversaries. Looking ahead, we recognize that the Department's rebalance to the Asia-Pacific will mean a shift in our own operational energy initiatives to reflect a broader set of missions, equipment, and threats. I believe we must focus on the energy implications of air and sea operations supported from a mix of permanent and contingency locations in both the United States and other host countries.

Over the long run, including energy considerations early in the force development process offers the largest opportunities to increase capability, reduce risk, and mitigate costs. We have continued to enhance the role of operational energy in Service Title X wargames that influence future organization, training, and equipment. Operational energy played a role in wargames led by each of the Services and the Defense Logistics Agency over the past year, and we anticipate this trend to continue in FY 2016.

The Department also continues to advocate the importance of developing and acquiring platforms that are energy supportable and operationally effective in contested environments. Achieving this goal will rely on the consistent and appropriate use of the Energy Key Performance Parameter (KPP) in new programs. During 2014, we worked with the Joint Staff J-4 to refine the Energy KPP instructions in the Joint Capabilities Integration and Development System (JCIDS) Manual to improve the quality and use of energy supportability analyses. By analyzing the energy performance and supportability early in the requirements and acquisition process, the Department is provided the opportunity to make informed decisions with regard to operational energy.

Using the new guidance, ASD(EI&E) and Joint Staff J-4 continued to assess the role of the Energy KPP compliance in new and updated systems, including LHA(R), TAO(X), Amphibious Combat Vehicle (ACV) and KC-46A aerial tanker. For example, with ASD(EI&E) and Joint Staff direction, the USMC is using a future wargame to analyze the operational ability of the LHA(R), the largest of the Amphibious Assault Ships, to support the F-35B Joint Strike Fighter (JSF). OASD(EI&E) and Joint Staff also are working with the Services to determine whether the

planned fleet of air and sea refuelers – TAO(X) and KC-46A – are sufficient to meet the energy needs of the future force.

As the Department considers additional initiatives to address the demand for operational energy, I anticipate future attention to how adaptations to air and sea platforms can improve our operational capability and decrease risks. Changes in operational practices, improvements in supporting routing, maintenance, and on-board energy management systems, and mid-life upgrades each represent significant opportunities for improvement.

### *Facilities Energy*

Where operational energy is most often a characteristic of warfighting platforms, the use of electricity, natural gas and other utilities is a fundamental characteristic of the nearly 300,000 buildings DoD owns and operates. The very nature of the problems are different, both in complexity and risk. Delivery of fuel to a forward operating location or an aircraft carrier in the Pacific Ocean is fundamentally different than tapping into the commercial electric grid. As such, fiscal considerations can take a more prominent role in facilities energy decisions. For example, energy efficiency projects are prioritized, in large part, by return on investment.

This also leads us to emphasis on third-party financing. For example, the Services have increased their focus on third-party financing tools, such as Energy Savings Performance Contracts (ESPCs) and Utility Energy Service Contracts (UESCs), to improve the energy efficiency of their existing buildings. With these tools private energy firms or utility companies make energy upgrades to our buildings and are paid back over time using utility bill savings. While such performance-based contracts have long been part of the Department's energy strategy, since 2012 the Department has significantly increased our efforts in response to the President's Performance Contracting Challenge issued in Dec 2011 and extends to 2016 and beyond.

In addition, most renewable energy projects we pursue are financed by private developers. DoD's authorities for renewable energy - particularly the ability to sign power purchase agreements of up to 30 years - provide incentives for private firms to fund the projects themselves, and can also provide a strong business case that they are able to offer DoD lower energy rates than are being paid currently. In addition, both Congress and the President have established renewable energy goals that motivate us to pay closer attention to these opportunities.

As a result, the Military Services have stepped up their efforts to develop robust renewable energy programs with a goal to deploy a total of 3 gigawatts of renewable energy by 2025.

Within the last three years, the Department has more than doubled the number of renewable energy projects in operation with over 800 megawatts in place today. The Military Departments are developing a number of new renewable energy projects, anticipating that all these will be operational by FY 2020. These planned projects will provide approximately 2 gigawatts of additional renewable energy, enough to power 400,000 American homes. The Army recently completed a number of large renewable energy projects, including Fort Drum, NY (28 MW Biomass) and Fort Huachuca, AZ (18 MW Solar PV), and the Air Force's large solar project at Davis-Monthan Air Force Base came online in FY14 (16.4 MW Solar PV). In addition, the

Navy has innovatively partnered with utilities across the U.S. to construct large renewable energy projects to power multiple Navy bases at once, with over 380 MW being procured in California and the East Coast.

## **Climate Change Adaptation**

Climate change continues to be a priority for the Department. Both the 2010 and 2014 Quadrennial Defense Review (QDR) discussed that the impacts associated with a changing climate present a threat to DoD's national security mission. I know there is interest in Congress on this issue, and many would like to ensure we do not take significant risks in response to climate projections. I would suggest that not only are we not taking such risks, but we are working to minimize the risks posed by future climate changes through prudent planning and analysis.

First, it is important to understand that DoD looks at climate change impacts through the lens of its mission. In the QDR, we refer to climate change as a "threat multiplier" because it has the potential to exacerbate many of the challenges we are dealing with today – from infectious disease to terrorism.

My focus, however, is on installations and infrastructure. Sea-level rise results in degradation or loss of coastal areas and infrastructure, as well as more frequent flooding and expanding intrusion of storm surge across our coastal bases. Facilities and transportation infrastructure are already impacted by thawing permafrost and melting sea ice around our Alaskan installations. The changing environment increases the threat to 400 threatened or endangered species our installations are home to, leading to increased probability of training and operating restrictions. Increased high-heat days impose limitations on what training and testing activities our personnel can perform. Decreasing water supplies and increased numbers of wildfires in the Southwest may jeopardize future operations at critical ranges.

Our warfighters cannot do their jobs without bases from which to fight, on which to train, or in which to live when they are not deployed. When climate effects make our critical facilities unusable, that is an unacceptable impact.

Even without knowing precisely how the climate will change, we can see that the forecast is for more sea level rise; more flooding and storm surge on the coasts; continuing Arctic ice melt and permafrost thaw; more drought and wildfire in the American Southwest; and more intense storms around the world. DoD is accustomed to preparing for contingencies and mitigating risk, and we can take prudent steps today to mitigate the risks associated with these forecasts. These range from the strategic (DoD's Arctic Strategy) to the mundane (ensuring backup power and computer servers are not in basements where facilities are facing increased flood risk). In 2014, we released the updated DoD Climate Change Adaptation Roadmap, which outlines our strategy for responding to climate change across the Department.

The Military Services have conducted initial studies that indicate critical installations in the West could run out of water within decades. Not only do we need to begin reducing this risk today, but we need to comprehensively review our installation footprint to identify similarly vulnerable

installations. We are conducting a screening level assessment of all DoD sites world-wide to identify where we are vulnerable to extreme weather events and tidal anomalies today. This assessment will be completed later this year and will inform the Military Services more comprehensive assessments of individual site adaptation needs.

Given the projected increases in major storm events, we've conducted a review of power resilience. We did a comprehensive review of installations to ensure critical capabilities have been identified, and have back-up power resources that have been tested and will work when there is a significant outage.

We have reviewed Department-level directives, instructions and manuals to identify where considerations of climate change should be incorporated. We are continuing to update those policies and programs that provide the foundation of the Department's actions to ensure we are considering the effects of a changing climate on our investments and actions. It's not necessarily exciting to change a master planning policy, but when we decide to build on higher ground, it reduces the risk to those new facilities and is a wiser use of taxpayer funds.

Our research continues on the effects of thawing permafrost on our Alaskan infrastructure, Southwestern extreme heat, Gulf and Atlantic coast sea level rise risks, and water issues in the Pacific islands.

In conclusion, our goal is to increase the Department's resilience to the impacts of climate change. To achieve this goal, we are dealing with climate change by taking prudent and measured steps to reduce the risk to our ability to conduct missions.

## **Conclusion**

Thank you for the opportunity to present the President's FY 2016 budget request for DoD programs supporting installations, energy, and the environment. As I have outlined above, our request is significantly more than last year because the total defense budget request is \$35 billion more than the Budget Control Act cap for Fiscal Year 2016. That translates into a significant reduction in facilities risk from last year, but if we are compelled to return to the budget caps, that reduction in risk will evaporate.

We appreciate Congress' continued support for our enterprise and look forward to working with you as you consider the FY 2016 budget.