OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY
RDT&E/ Defense Wide BA# 3

PE NUMBER AND TITLE
0603716D8Z - Strategic Environmental Research and Development Program (SERDP)

Cost ($ in Millions)		FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	Total Program Element (PE) Cost	65.541	63.682	68.874	69.173	71.107	72.094	73.041	74.068
P470	Strategic Environmental Research and Development Program (SERDP)	65.541	63.682	68.874	69.173	71.107	72.094	73.041	74.068

A. Mission Description and Budget Item Justification: (U) Congress established the Strategic Environmental Research and Development Program (SERDP) in 1990 (10 U.S.C. Section 2901-2904) to address Department of Defense (DoD) and Department of Energy (DOE) environmental concerns. It is conducted as a DoD program, jointly planned and executed by the DoD, DOE, and the Environmental Protection Agency (EPA), with strong participation by other Federal agencies, industry, and academia. SERDP's objective is to improve DoD mission readiness by providing new knowledge, cost-effective technologies, and demonstrations in the areas of Environmental Restoration, Munitions Management, Sustainable Infrastructure , and Weapons Systems and Platforms. SERDP does this by (1) addressing high priority, mission-relevant, defense environmental technology needs necessary to enhance military operations, improve military systems' effectiveness, enhance military training/readiness, sustain DoDs training and testing range infrastructure, and help ensure the safety and welfare of military personnel and their dependents; and (2) eliminating or reducing the generation of pollution and use of hazardous materials to reduce operational and life-cycle costs, as well as reducing the cost of necessary remedial actions and compliance with laws and regulations. As a secondary benefit, SERDP helps solve significant national and international environmental problems. The keys to a growing list of SERDP technological successes are the ability to respond aggressively to these priority defense needs; the pursuit of universal, world-class technical excellence; emphasis on constant technology transfer to field use; and sound fiscal management.

B. Program Change Summary	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	75.429	67.149	70.977	71.111
Current BES/President's Budget (FY 2008/2009)	65.541	63.682	68.874	69.173
Total Adjustments	-9.888	-3.467	-2.103	-1.938
Congressional Program Reductions		-3.467		
Congressional Rescissions				
Congressional Increases				
Reprogrammings	-8.750			
SBIR/STTR Transfer	-1.138			
Other			-2.103	-1.938

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C. Other Program Funding Summary: Not Applicable.

D. Acquisition Strategy: Not Applicable.

E. Performance Metrics:

FY	Strategic Goals Supported	Existing Baseline	Planned Performance Improvement / Requirement Goal	Actual Performance Improvement	Planned Performance Metric / Methods of Measurement	Actual Performance Metric / Methods of Measurement
08	DoD Environmental Requirements					

Comment: Performance in this program is monitored at two levels. At the lowest level, each of the more than 160 individual projects is measured against both technical and financial milestones on a quarterly and annual basis. At a program-wide level, progress is measured against DoD's environmental requirements and the development of technologies that address these requirements as well as the transition of these technologies to either to demonstration and validation programs or to direct use in the field.

OSD RDT&E PROJECT JUSTIFICATION (R2a Exhibit)

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RDT&E/ Defense Wide BA# 3	**0603716D8Z - Strategic Environmental Research and Development Program (SERDP)**	**P470**

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B. Accomplishments/Planned Program:

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Munitions Management (MM):	14.877	14.224	16.399	16.470

(U) FY 2006 Accomplishments:
Investments in munitions management yielded advanced technology to address the most difficult and persistent issues facing our military testing and training lands, ranging from advanced signal processing approaches for improved detection and discrimination to next generation sensors. Investigators continued to use the two standardized test sites for the demonstration and evaluation of UXO technologies. New start projects concentrated on underwater UXO characterization technologies, wide area assessment, improved sensor designs, and improving detection and discrimination methods.

(U) FY 2007 Plans: Continuing efforts in UXO detection and discrimination technologies, projects include developing navigation tools to support collection of geophysical data, characterizing underwater sites, and developing novel sensors and signal processing techniques. New start efforts will focus on wide area assessment on active DoD ranges, precision geolocation tools to collect geophysical data to caharacterize sites with munitions and explosives of concern (MEC).

(U) FY 2008 and 2009 Plans: Continuing efforts will include technologies to eliminate or mitigate future UXO contamination, and advanced electromagnetic sensor development. New initiatives will continue to focus on wide area assessment technologies, advanced sensors, signal processing, and supporting technologies and protocols.

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Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Environmental Restoration:	19.955	18.754	18.858	18.940

(U) FY 2006 Accomplishments:
In FY 2006 SERDP-funded research continued to address major contaminants of concern at DoD facilities including munitions constituents (explosives, propellants and pyrotechnics) found on ranges and chlorinated solvents (TCE, PCE) found at over half of DoD remediation sites. Efforts continued to: 1) investigate cost-effective in-situ remediation and in place management strategies for contaminated sediments; 2) improved understanding of the delivery and distribution of remedial materials in the subsurface; 3) technologies to assess the impact of processes on fate and transport of contaminants in sediments; and 4) new technologies for containment and/or treatment of energetic materials on ranges. Congressional additions included $1,000,000 to continue work at Texas Tech University on risk based approaches for improved toxic chemical management and $1,000,000 for the remediation of environments contaminated by ammonium perchlorate at the University of Idaho.

(U) FY 2007 Plans: Researchers will continue to develop technologies needed to support the sustainability of DoD's training and testing ranges with specific attention on fate and effect of munitions constituents from operational ranges. Work will contine to: characterize the source term of energetic compounds in aquatic environments; and develop new, cost-effective methods for the in-situ treatment of perchlorate in ground water. New research will begin on improving our understanding of the performance of remediation technologies in fractured geological settings. SERDP will focus on improving the scientific understanding and development of innovative cost effective methods for the bioremediation of munitions constituents, specifically energetics and nitroaromatic compounds. Additional initiatives will continue work in the areas of source-zone treatment of dense non-aqueous phase liquids, and the phytoremediation of energetic contaminants.

(U) FY 2008 and 2009 Plans: SERDP will continue to pursue initiatives to ensure the continued use and sustainability of our training ranges include exposure assessments of the fate and transport of energetic materials, and screening level and modeling tools. The knowledge of the potential sources, the movement of residual energetic materials and/or their breakdown products, and the assessment of environmental exposure will assist in total assessment of potential environmental impacts stemming from the use of test and training ranges. Work will continue on understanding how groundwater remediation technologies perform in fractured geologic settings; assessing ecosystem risk and recovery at sites with contaminated sediments and the use of molecular biological tools for groundwater remediation.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Sustainable Infrastructure:	14.770	15.292	17.219	17.293

(U) FY 2006 Accomplishments:
SERDP continued to focus efforts on sustaining the use of military ranges including: efforts to understand and manage invasive plant species that negatively affect training activities; characterizing military activities that contribute to the transport of non-indigenous species; monitor migratory bird species on military lands; predicting marine mammal population densities; and develop remote sensing technologies to identify threatened/endangered species habitats to meet requirements of the Endangered Species Act and Migratory Bird Treaty Act. New initiatives included developing new techniques for selecting the most effective acquisition of land as buffers for active ranges, understanding the mechanisms of forest decline on installations in the Southeastern US and the impact on habitat, and developing new methods for establishing scientifically defensible population recovery goals for threatened and endangered species. A new initiative begun in FY 2006 is the Defense Coastal and Estuarine Research Program (DCERP) at Camp LeJeune, an estuarine and coastal research land/resources management initiative to assess the impacts of military training operations in these environments.

(U) FY 2007 Plans: SERDP will continue and initiate new efforts to address persistent issues that severely impact installation readiness and their ability to support force training and testing. Research efforts will include an assessment of the stressors on military lands caused by future larger/centralized force structures, development of new technologies to reduce and/or treat solid waste and develop technologies to safely and effectively dispose of composite materials that come about as a result of manufacturing and repair processes at military depots.

(U) FY 2008 and 2009 Plans: SERDP will continue and initiate new efforts to address persistent issues that severely impact installation sustinability and readiness and their ability to support force training and

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testing including assessment of the impact of military noise sources and innovative monitoring systems for impulse noise. Continuing efforts will include ecological forecasting models to assess the impacts of military training activities on endangered species; methods to control the spread of invasive species on military training lands; watershed management models for training ranges; and assessing human annoyance from military noise and reduction of military aircraft noise.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Weapons Systems and Platforms:	15.939	15.412	16.398	16.470

(U) FY 2006 Accomplishments:
SERDP continued to work on green energetics and determining the emissions factors from exiting and new jet engines including the engines for the Joint Strike fighter. New initiatives included development of a chromium and VOC free paint systems for platforms, reduction of packaging waste and the development of compostable packaging for military items, and environmentally benign synthesis of energetic materials and their precursors. The Congressional appropriation included $1,800,000 for ChemNet enviromax 4.0.

(U) FY 2007 Plans:
The Weapons Systems and Platforms program will focus on development of "green" energetics, emissions characterization and reduction, and munitions and weapons systems components that have little impact on the environment. Other initiatives include "green biosynthesis routes for energetic materials and elimination of hazardous materials in coatings and coating processes. New work will begin in environmentally benign repair of military composite components and advancement of fundamental combustion science to reduce particulate matter emissions from military platforms.

(U) FY 2008 and 2009 Plans:
SERDP will continue to pursue efforts to develop new propellants, pyrotechnics, and explosive materials that will reduce or eliminate the release of toxic materials to the environment yet still meet mission performance requirements. SERDP also plans to fund research for technologies and/or materials that eliminate, reduce, or control environmentally damaging VOCs, hazardous air pollutants (HAPs), particulates, and ODSs from DoD platforms, weapons systems, and industrial processes. Environmentally benign alternatives will include new materials to replace these compounds, new processes that eliminate use of these compounds, and new processes that reduce or eliminate the production of these compounds as a byproduct.

C. Other Program Funding Summary: Not Applicable.

D. Acquisition Strategy: Not Applicable.

E. Major Performers Not Applicable.