Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Office of the Secretary Of Defense	Date: May 2017
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603716D8Z / *Strategic Environmental Research and Development Program (SERDP)*

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	237.849	54.261	65.078	71.832	-	71.832	77.756	78.150	79.600	81.175	Continuing	Continuing
P470: *Strategic Environmental Research and Development Program (SERDP)*	237.849	54.261	65.078	71.832	-	71.832	77.756	78.150	79.600	81.175	Continuing	Continuing

A. Mission Description and Budget Item Justification

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 and environmental performance by providing new scientific knowledge and cost-effective technologies in the areas of Environmental Restoration, Munitions Response, Resource Conservation and Resilience, and Weapons Systems and Platforms. SERDP does this by addressing high priority DoD environmental technology requirements. SERDP enhances military operations, improves military systems` effectiveness, enhances military training/readiness, sustains DoD's training and test ranges and installation infrastructure, and helps ensure the safety and welfare of military personnel and their dependents by eliminating or reducing the generation of pollution and use of hazardous materials and reducing the cost of remedial actions and compliance with environmental laws and regulations. As 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 and proactively to priority defense environmental needs; the pursuit of world-class technical excellence; and an emphasis on constant technology transfer.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	54.261	65.078	71.832	-	71.832
Current President's Budget	54.261	65.078	71.832	-	71.832
Total Adjustments	0.000	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Office of the Secretary Of Defense			Date: May 2017
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603716D8Z / *Strategic Environmental Research and Development Program (SERDP)*	Project (Number/Name) P470 / *Strategic Environmental Research and Development Program (SERDP)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
P470: *Strategic Environmental Research and Development Program (SERDP)*	237.849	54.261	65.078	71.832	-	71.832	77.756	78.150	79.600	81.175	Continuing	Continuing

A. Mission Description and Budget Item Justification

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: Environmental Restoration	9.985	13.666	16.070
Description: Environmental Restoration (ER) reduces DoD's liabilities by developing technologies for the cost-effective detection, characterization, containment, and remediation of contamination in soil, sediments, and water.			
FY 2016 Accomplishments: New research initiatives focused on the highest priority DoD requirements to reduce DoD's liabilities by developing technologies for the cost-effective detection, characterization, containment, and remediation of contamination in soil, sediments, and water. Specific Statements of Need were released and proposals were selected that addressed: 1) Measurement and Enhancement of Abiotic Attenuation Processes in Groundwater, 2) Ecotoxicity of Perfluorinated Compounds, and 3) Improved Understanding of Particle Deposition from Low-Order Detonations of High Explosive Munitions. Details are available at www.serdp-estcp.org.			
FY 2017 Plans: New research initiatives will focus on the highest priority DoD requirements to reduce DoD's liabilities by developing technologies for the cost-effective detection, characterization, containment, and remediation of contamination in soil, sediments, and water.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Specific Statements of Need were released and proposals selected that will address 1) Improved Strategies for Remediating Mixed Contaminants in Groundwater, 2) Development of Standardized Sampling and Analytical Techniques for Munitions Constituents, and 3) Improved Understanding of the Fate and Effects of Insensitive Munitions Constituents. ***FY 2018 Plans:*** New research initiatives will focus on the highest priority DoD requirements to reduce DoD's liabilities by developing technologies for the cost-effective detection, characterization, containment, and remediation of contamination in soil, sediments, and water. Specific Statements of Need were released that address 1) Improved Understanding of Per- and Polyfluoroalkyl Substance Source Zones, 2) In Situ and Ex Situ Remediation of Per- and Polyfluoroalkyl Substance Contaminated Groundwater, 3) Improved Understanding of Stormwater Impacts and Control on Sediment Recontamination and Recovery, and 4) Innovative Approaches for Monitoring and Implementing In Situ Remediation of Contaminated Aquatic Sediments.			
Title: Munitions Response (MR) ***Description:*** Munitions Response (MR) develops detection, classification, and remediation technologies for Unexploded Ordnance (UXO) to address the significant DoD liability in the Military Munitions Response Program. Investments are also made to improve active range clearance and to reduce generation of UXO during live fire testing and training operations. ***FY 2016 Accomplishments:*** New research initiatives focused on the highest priority DoD requirements in underwater UXO detection and classification and protocols to reduce the costs associated with detecting and remediating UXO underwater. A Statement of Need was released and proposals were selected to address these issues. Details are available at www.serdp-estcp.org. ***FY 2017 Plans:*** New research initiatives will focus on the highest priority DoD requirements in underwater UXO detection and protocols to reduce the costs associated with detecting and remediating UXO underwater. Specific Statements of Need were released and projects selected that address 1) Detection, Classification, and Remediation of Military Munitions Underwater and 2) Preliminary Design Study for Munitions Response Underwater Test Site. ***FY 2018 Plans:*** New research initiatives will focus on the highest priority DoD requirements in underwater UXO detection and protocols to reduce the costs associated with detecting, remediating, or managing UXO underwater. A specific Statement of Need was released that addresses Detection, Classification, and Remediation of Military Munitions Underwater.	5.048	6.508	7.835
Title: Resource Conservation and Resilience (RC)	26.369	29.285	30.487

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Description: Resource Conservation and Resilience (RC) develops the science and technologies required to sustain training and testing ranges. ***FY 2016 Accomplishments:*** New research initiatives focused on the highest priority DoD requirements to develop the science and technologies required to sustain training and testing ranges and respond to requirements in the 2010 QDR, including the assessment of climate change impacts to DoD installations. Specific Statements of Need were released and proposals were selected for funding to address: 1) Changes in Pathogen Exposure Pathways under Non-Stationary Conditions and Their Implications for Wildlife and Human Exposure on Department of Defense Lands and 2) Improved Understanding of Wildland Fire Combustion Processes for Department of Defense Managed Ecosystems. Details are available at www.serdp-estcp.org. ***FY 2017 Plans:*** New research initiatives will focus on the highest priority DoD requirements to develop the science and technologies required to sustain training and testing ranges and respond to requirements in the 2014 QDR, including the assessment of climate change impacts to DoD installations. Specific Statements of Need were released and proposals were selected for funding to address: 1) Phenological Response to a Changing Climate on Department of Defense Lands and Waters: Implications for Management and 2) Long-Term Ecological Studies: Testing Previous Hypotheses and Conclusions. ***FY 2018 Plans:*** New research initiatives will focus on the highest priority DoD requirements to develop the science and technologies required to sustain training and testing ranges. Specific Statements of Need were released to address 1) Advanced Approaches for Managing Individual Species and Ecosystems Across Jurisdictional Boundaries in a Non-Stationary World and 2) Climate Change Vulnerability Assessment of Major Habitats on and Around DoD lands.			
Title: Weapons Systems and Platforms (WP) ***Description:*** Weapons Systems and Platforms (WP) develops technologies and materials that reduce the waste and emissions associated with the manufacturing, maintenance, and use of DoD weapons systems and platforms to reduce future environmental liabilities and their associated costs and impacts. ***FY 2016 Accomplishments:*** New research initiatives focused on the highest priority DoD requirements to develop technologies and materials that reduce the waste and emissions associated with the manufacturing, maintenance, and use of DoD weapons systems and platforms to reduce future environmental liabilities and their associated costs and impacts. Specific Statements of Need were released and proposals were selected for funding to address: 1) Data to Improve Understanding of the Source and Mechanism of Full Scale	12.859	15.619	17.440

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Military Tactical Aircraft Engine Noise, 2) Reducing or Eliminating HAPs and VOCs from Polyurethane Rain Erosion Coatings, 3) Environmentally Sustainable Manufacturing for Energetic Formulations, and 4) Alternatives for Chromium and Nickel Plating in Repair Operations. Details are available at www.serdp-estcp.org. ***FY 2017 Plans:*** New research initiatives will focus on the highest priority DoD requirements to develop technologies and materials that reduce the waste and emissions associated with the manufacturing, maintenance, and use of DoD weapons systems and platforms to reduce future environmental liabilities and their associated costs and impacts. Specific Statements of Need were released and proposals were selected for funding to address: 1) Fluorine-Free Aqueous Film Forming Foam, 2) No/Low Global Warming Potential Alternatives to Ozone Depleting Refrigerants, and 3) Surface Morphology Modification by Non-Chemical Methods to Enhance Coating Adhesion and Mechanical Bonding of Metal Surfaces. ***FY 2018 Plans:*** New research initiatives will focus on the highest priority DoD requirements to develop technologies and materials that reduce the waste and emissions associated with the manufacturing, maintenance, and use of DoD weapons systems and platforms to reduce future environmental liabilities and their associated costs and impacts. Specific Statements of Need were released to address: 1) Advancing Emulsion Science for Application in Armed Forces Vessels, 2) Non-Chemical, Non-Media Removal Process for Thick, Elastomeric Specialty Coatings Used on DoD Weapon Systems, 3) Systems Approaches in Propulsion and Explosives Toward Replacing Materials Such as Ammonium Perchlorate (AP), RDX, and TNT, and 4) Development of Agile, Novel Expeditionary Battlefield Manufacturing Processes Using Recycled and Reclaimed Materials.			
Accomplishments/Planned Programs Subtotals	54.261	65.078	71.832

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

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

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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.