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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Army **Date:** February 2020

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605857A / <i>Environmental Quality Technology Mgmt Support</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	3.138	4.681	1.780	-	1.780	1.812	1.868	1.715	1.552	0.000	16.546
031: <i>Environmentally Sustainable Acquisition/Logistics</i>	-	2.217	4.119	1.336	-	1.336	1.362	1.388	1.417	1.422	0.000	13.261
061: <i>Environmental Quality Technology Support</i>	-	0.921	0.562	0.444	-	0.444	0.450	0.480	0.298	0.130	0.000	3.285

A. Mission Description and Budget Item Justification

This Program Element (PE) funds environmental quality technology (EQT)-related management support functions including support of research, development, test and evaluation required for EQT technical integration efforts at demonstration/validation test sites, technical information and activities, test facilities and general test instrumentation, and EQT requirement assessments. Funds support the management of technology transfer associated with technology demonstrated and validated as part of Army EQT projects. In addition, this PE provides support to the Army weapon system acquisition community to address environmental quality requirements under the Environmentally Sustainable Acquisition/Logistics Program.

The Environmentally Sustainable Acquisition/Logistics Project includes program management for developing acquisition strategies that achieve system key performance parameters and sustain the environment without permanent and unacceptable change to the natural environment or human health from system concept refinement through disposal. The Project involves systematic consideration of environmental impacts, energy use, natural resources, installation impacts, economics, and quality of life. It provides support to the system acquisition community (Program and Project Managers) to integrate environmental quality analyses into the system acquisition process. The goal of the effort is to resolve environmental quality issues related to weapon systems that are identified during design, development, testing, operation, or support to reduce Army environmental liabilities and total ownership costs, including efforts to eliminate the use of hazardous and ozone-depleting materials from weapon systems and facilities.

The Pollution Prevention Tech Support Project funds the management support costs to execute the Toxic Metals Reduction, Airborne Lead Reduction, and Low Global Warming Potential (LGWP) environmental quality technology programs, which support Cross Functional Teams and the Army's top modernization priorities by addressing potential obsolescence of legacy materials and current and emerging impacts on human health and the environment.

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B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	3.211	4.681	2.790	-	2.790
Current President's Budget	3.138	4.681	1.780	-	1.780
Total Adjustments	-0.073	0.000	-1.010	-	-1.010
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.073	-			
• Adjustments to Budget Years	-	-	-1.010	-	-1.010

Change Summary Explanation

FY2021 decrease of \$1.010M realigned to support higher Army priorities.

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Appropriation/Budget Activity 2040 / 6					R-1 Program Element (Number/Name) PE 0605857A / <i>Environmental Quality Technology Mgmt Support</i>				Project (Number/Name) 031 / <i>Environmentally Sustainable Acquisition/Logistics</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
031: <i>Environmentally Sustainable Acquisition/Logistics</i>	-	2.217	4.119	1.336	-	1.336	1.362	1.388	1.417	1.422	0.000	13.261
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Environmentally Sustainable Acquisition/Logistics (ESAL) Project provides support to the system acquisition community to integrate environmental quality issues and concerns into the life cycle system acquisition process, including human health risks, life safety, material obsolescence due to regulatory pressures, occupational exposures and energy efficiency. This includes helping the acquisition community address high priority issues associated with hexavalent chromium, cadmium and airborne lead. The focus of ESAL is on improving readiness, enabling mission capabilities, improving acquisition processes, reducing supportability burden, and minimizing total ownership cost. The Assistant Secretary of the Army for Installations, Energy and Environment has defined the functions of the ESAL project in coordination with the Army Acquisition Executive and the Assistant Secretary of the Army (Acquisition, Logistics, and Technology). This Project provides direct support to the Army acquisition community to pursue environmental sustainability and comply with legal statutes, policies and regulations during the life cycle of Army materiel. ESAL helps address Army Modernization Priorities, while sustaining readiness and achieving compliance with its weapon systems, industrial base, field and deployed activities directed by international treaties, Federal statutes, Executive Orders, Department of Defense (DoD) and Army policies and regulations.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Environmental Quality (EQ) Support (CCDC)	1.000	0.975	0.600
Description: Provide EQ Support to Acquisition Programs via Cross Functional Teams (CFTs), Program Executive Offices (PEOs) and Program Managers (PMs).			
FY 2020 Plans: Will provide support to PEOs / PMs and CFTs to integrate EQ considerations into systems engineering activities. This will include fulfillment of National Environmental Policy Act requirements, definition of EQ technology needs to meet operational requirements, analysis of technical data to support implementation decisions, participation in technical and cost risk assessment activities, and assessment and revision of contractual and operational requirements for successful technology integration, operation and support. Will analyze impending legal statutes impacting production, operation and support of weapon systems. Will assess weapon system readiness impacts (e.g., production levels, training, operational tempo and maintenance activities) resulting from EQ issues affecting industrial base and garrisons. Will provide Army acquisition community representation in select OSD and DA committees addressing environmental legislation and rulemaking.			
FY 2021 Plans: Will provide support to CFTs, PEOs and PMs to integrate EQ considerations into systems engineering activities. This will include fulfillment of National Environmental Policy Act requirements, definition of EQ technology needs to meet operational requirements,			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
<p>analysis of technical data to support implementation decisions, participation in technical and cost risk assessment activities, and assessment and revision of contractual and operational requirements for successful technology integration, operation and support. Will analyze impending statutes and regulations impacting production, operation and support of weapon systems. Will assess weapon system readiness impacts (e.g., production levels, training, operational tempo and maintenance activities) resulting from EQ issues affecting industrial base and garrisons. Will provide Army acquisition community representation in select Office of the Secretary of Defense and Department of the Army committees addressing environmental legislation and rulemaking.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding realigned to higher modernization priorities.</p>				
<p>Title: Environmental Quality Technology Management (CCDC)</p> <p>Description: Provide management support for Army EQ technology efforts.</p> <p>FY 2020 Plans: Will provide system acquisition support to the Army's EQ technology program and coordination of EQ-related systems' needs for expanded RDTE efforts in support of Army Modernization Priorities. Will manage and oversee technology integration efforts by Army Life Cycle Management Commands for weapon systems in all stages of design, procurement and operations/support. Will coordinate RDTE requirements among members of the Army EQ Technology Teams and Cross Functional Teams, will coordinate technology evaluations and operational requirements in support of weapon system platform integration, will manage and oversee test plan development, will oversee testing activities, and will analyze test results to support weapon systems engineering decision making.</p> <p>FY 2021 Plans: Will provide system acquisition support to the Army's EQ technology program and coordination of EQ-related system needs for expanded Research, Development, Test and Evaluation efforts in support of Army Modernization Priorities. Will manage and oversee technology integration efforts by Army Life Cycle Management Commands for weapon systems in all stages of design, procurement and operations/support. Will coordinate technology requirements among members of the Army EQ Technology Teams and Cross Functional Teams, will coordinate technology evaluations and operational requirements in support of weapon system platform integration, will manage and oversee test plan development, will oversee testing activities, and will analyze test results to support weapon systems engineering decision making.</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding realigned to higher modernization priorities.</p>		1.215	1.107	0.736
<p>Title: Headquarters Army Environmental System (HQAES)</p>		-	1.947	-

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
<p>Description: Headquarters Army Environmental System support (HQAES) is the Army's environmental enterprise business system of record enabling the Army to collect, analyze, and report environmental data. HQAES is used by Installations, Commands, Headquarters Department of the Army, and various service providers (e.g., U.S Army Corps of Engineers, U.S. Army Environmental Command) for managing the environmental program. HQAES is the feeder system for environmental liabilities reporting, which is the largest liability on the Army's financial statement. HQAES has the capability to track environmental project execution and end-to-end program management and provides visibility and transparency needed for cost and functional environmental management, including cleanup, compliance and conservation at active Army, Army National Guard; Army Reserve and Base Realignment and Closure (BRAC) installations.</p> <p>FY 2020 Plans: In FY20 the HQAES PMO will continue execution of capability enhancements to improve usability, enhance decision support, and improve the integrity and available of actionable data. This will include the following to include those identified during the roadmap/acquisition refinement:</p> <ul style="list-style-type: none"> - Provide remote capabilities to perform Environmental Performance Assessment System audits, data analysis, and other processes required for critical business lines - Develop data interfaces been remote applications, data storage systems or front-end views and HQAES - Integrate solid waste management capabilities - Integrate data from authoritative Army and DoD sources (real property, financial, geospatial, global mail etc.) - Provide universal reporting formats for Army-wide use <p>FY 2020 to FY 2021 Increase/Decrease Statement: Funding realigned to higher modernization priority.</p>				
<p>Title: FY 2018 NDAA SEC 825 MDAP Cost Overrun</p> <p>Description: FY 2018 NDAA SEC 825 MDAP Cost Overrun</p>		0.002	-	-
<p>Title: FY 2020 SBIR/STTR Transfer</p> <p>Description: Funding transferred in accordance with Title 15 USC ?638</p> <p>FY 2020 Plans: Funding transferred in accordance with Title 15 USC ?638</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement:</p>		-	0.090	-

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Funding transferred in accordance with Title 15 USC ?638			
Accomplishments/Planned Programs Subtotals	2.217	4.119	1.336

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

TBD

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Appropriation/Budget Activity 2040 / 6					R-1 Program Element (Number/Name) PE 0605857A / <i>Environmental Quality Technology Mgmt Support</i>				Project (Number/Name) 061 / <i>Environmental Quality Technology Support</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
061: <i>Environmental Quality Technology Support</i>	-	0.921	0.562	0.444	-	0.444	0.450	0.480	0.298	0.130	0.000	3.285
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides Research, Development, Test, & Evaluation (RDTE) Management Support for the demonstration and validation of innovative technologies to modernize materials and processes required for current and future operational sustainment and warfighter training capabilities within the Army's Environmental Quality Technology program. The Project supports technologies that increase life safety, reduce Soldier and worker human health risks, enhance readiness and enable mission capabilities of the current and future force, while simultaneously increasing performance and standardization across the Army. This Project provides for management of RDTE activities conducted under project 0603779A (Environmental Quality Technology Dem/Val) / Project E21 (Environmental Quality Technology Dem/Val), which supports the Cross Functional Teams and the Army's top modernization priorities by addressing potential obsolescence of legacy materials and current and emerging impacts on human health and the environment. The Project expedites technology transition from the laboratory to operational use by establishing toxicology assessments to support the demonstration of modern materials and processes fulfilling or surpassing the performance requirements outlined in Material Specifications, Depot Maintenance Work Requirements, Technical Manuals, Drawings, and other technical data.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Management of Army Environmental Quality Technology Programs (CCDC)	0.439	0.537	0.444
Description: Manage and oversee the demonstration/validation of weapon system pollution prevention technologies within the Army's Environmental Quality Technology Program with a focus on eliminating the high priority issues associated with hexavalent chromium, cadmium and airborne lead through material substitution.			
FY 2020 Plans: Will manage and oversee the demonstration/validation of three technology efforts that support the Future Vertical Lift, Next Generation Combat Vehicle, Long Range Precision Fire and Soldier Lethality Army modernization priorities: Toxic Metal Reduction in Surface Finishing of Army Weapon Systems; Airborne Lead Reduction from Army Weapon Systems; and Low Global Warming Potential Alternatives to Ozone Depleting Substances.			
FY 2021 Plans: Will manage and oversee the demonstration/validation of three technology efforts that support the Future Vertical Lift, Next Generation Combat Vehicle, Long Range Precision Fire and Soldier Lethality Army modernization priorities: Toxic Metal Reduction in Surface Finishing of Army Weapon Systems; Airborne Lead Reduction from Army Weapon Systems; and Low Global Warming Potential Alternatives to Ozone Depleting Substances.			
FY 2020 to FY 2021 Increase/Decrease Statement:			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
Funding realigned to higher modernization priorities.				
Title: Environmental, Safety and Occupational Health Impacts of Short-Term Noise Assessment Procedures Description: Manage and oversee the demonstration and validation of technologies for making Army blast noise short-term noise assessment.		0.247	-	-
Title: Advanced Water Reuse Technology for Fixed Installations Description: Advanced water reuse technologies demonstration and guidance for Army fixed installations applications.		0.235	-	-
Title: FY 2020 SBIR/STTR Transfer Description: Funding transferred in accordance with Title 15 USC ?638 FY 2020 Plans: Funding transferred in accordance with Title 15 USC ?638 FY 2020 to FY 2021 Increase/Decrease Statement: Funding transferred in accordance with Title 15 USC ?638		-	0.025	-
Accomplishments/Planned Programs Subtotals		0.921	0.562	0.444
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				