

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army **Date:** May 2021

Appropriation/Budget Activity 2040: Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0603779A / Environmental Quality Technology - Dem/Val
--	--

COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	-	19.089	20.906	11.921	-	11.921	-	-	-	-	-	-
035: National Defense Cntr For Enviro Excellence	-	6.345	8.086	5.313	-	5.313	-	-	-	-	-	-
E21: Environmental Quality Technology Dem/Val	-	12.744	12.820	6.608	-	6.608	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

There is broad potential application for environmental quality technology (EQT) to be applied to multiple Army weapon systems and installations. However, technology must be demonstrated and validated (total ownership cost and performance data identified) before potential users will consider exploiting it. This Program Element (PE) includes Projects focused on validating the general military utility or cost reduction potential of technology when applied to different types of infrastructure, military equipment or techniques. It may include validations and proof-of-principle demonstrations in field exercises to evaluate upgrades or provide new operational capabilities. The validation of technologies will be in as realistic an operating environment as possible to assess performance or cost reduction potential. EQT demonstration/validation is systemic and applicable across Department of Army sites and installation problems (e.g. unexploded ordnance detection and discrimination). This PE supports the Army's top modernization priorities by addressing potential obsolescence of legacy materials and current and emerging impacts on human health and the environment. All work is endorsed by potential users and supported by a state-of-the-art assessment to determine when the technology can transition to the user for implementation.

B. Program Change Summary (\$ in Millions)

	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022 Base</u>	<u>FY 2022 OCO</u>	<u>FY 2022 Total</u>
Previous President's Budget	19.561	13.387	12.166	-	12.166
Current President's Budget	19.089	20.906	11.921	-	11.921
Total Adjustments	-0.472	7.519	-0.245	-	-0.245
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	8.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.472	-0.481			
• Adjustments to Budget Years	-	-	-0.245	-	-0.245

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 035: National Defense Cntr For Enviro Excellence

	FY 2020	FY 2021

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Army	Date: May 2021
---	-----------------------

Appropriation/Budget Activity 2040: <i>Research, Development, Test & Evaluation, Army / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>
---	---

Congressional Add Details (\$ in Millions, and Includes General Reductions)	FY 2020	FY 2021
Congressional Add: <i>Program increase - biopolymers for military infrastructure</i>	2.853	3.000
Congressional Add Subtotals for Project: 035	2.853	3.000
Project: E21: <i>Environmental Quality Technology Dem/Val</i>		
Congressional Add: <i>Environmental quality technology demonstration and validation: Congressional Add - Protective Coatings/ Biopolymers (CCDC)</i>	5.000	-
Congressional Add: <i>Environmental quality technology demonstration and validation: Congressional Add - High Pressure Waterjet Technology (USACE)</i>	-	5.000
Congressional Add Subtotals for Project: E21	5.000	5.000
Congressional Add Totals for all Projects	7.853	8.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army										Date: May 2021		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>				Project (Number/Name) 035 / <i>National Defense Cntr For Enviro Excellence</i>			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
035: <i>National Defense Cntr For Enviro Excellence</i>	-	6.345	8.086	5.313	-	5.313	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The National Defense Center for Environmental Excellence (NDCEE) was established by Congress in 1990 with a directive to "serve as a national leadership organization to address high priority environmental problems for the Department of Defense (DoD), other government organizations, and the industrial community." In May 2008, the Program was re-designated from the National Defense Center for Environmental Excellence to the National Defense Center for Energy and Environment to ensure that the Center's mission recognizes and addresses the strategic interdependence of energy and environmental technology requirements within an overall sustainability framework in support of our installations, weapons systems and war fighters. This name change also directly supports the DoD's proactive implementation of Executive Order 13423, "Strengthening Federal Environmental, Energy and Transportation Management." The NDCEE Program has evolved into a national resource for demonstrating, validating and transitioning innovative Environmental, Safety & Occupational Health and Energy (ESOHE) technologies. This Program is managed by the Army on behalf of the Assistant Secretary of Defense for Sustainment.

The United States (U.S.) Army's broadly encompassing and growing mobile, personal and stationary technological requirements include: infrastructure, alternative and synthetic energy, training lands, emerging contaminants, transportation, systems integration, personnel well-being, and others. Further, to train as we fight, validated ESOHE technologies need to be available and implemented at Army installations. The NDCEE will continue to demonstrate, validate, and transfer these technologies supporting our integrated environment, energy, safety, occupational health and energy objectives to enable mission, readiness, innovation, lethality and modernization to ensure our Soldiers maintain a technological advantage over our adversaries.

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

	FY 2020	FY 2021	FY 2022
Title: Conduct demonstration/validation of environmentally acceptable technologies that enhance military readiness and reduce production, operating, and/or disposal costs.	3.365	4.886	5.109
Description: NDCEE supports the demonstration and validation of mature (BA4) environment, safety, occupational health, and energy technologies that support the mission requirements. The objective is to invest in innovative technologies that support military mission/readiness, employ a high degree of technical fidelity, have a high potential for transition success, and align with modernization goals.			
FY 2021 Plans: Will conduct demonstration/validation of environment, safety, occupational health, and energy technologies that support military mission/readiness, employ a high degree of technical fidelity, have a high potential for transition success, and align with			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army	Date: May 2021
--	-----------------------

Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>	Project (Number/Name) 035 / <i>National Defense Cntr For Environmental Excellence</i>
--	---	---

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
modernization goals. Will conduct project selection process for potential FY 2022 new starts. Technologies will be selected by the NDCEE project selection committee and approved by the NDCEE Lead Agent. FY 2022 Plans: Funding will be provided for projects selected the previous year and still require funds; projects are generally completed within two years. The NDCEE Program Management Office will coordinate the project selection process for potential FY 2022 new project starts. Technologies will be selected by the NDCEE project selection committee and approved by the NDCEE Executive Agent. FY 2021 to FY 2022 Increase/Decrease Statement: Adjusted for Inflation			
Title: NDCEE Government program management during contract negotiations and during project formulation, execution, and technology transfer. Description: Funds the NDCEE Government program management during comprehensive NDCEE lifecycle, including project cultivation and identification, screening, selection, execution, and technology transition. FY 2021 Plans: Will fund the NDCEE program management during comprehensive NDCEE lifecycle, including project cultivation and identification, screening, selection, execution, reporting, and technology transfer. Includes contracting office support for contract closeouts, travel to conduct program management oversight, and program coordination and education to DoD stakeholders. FY 2022 Plans: Will fund the NDCEE program management during comprehensive NDCEE lifecycle, including project cultivation and identification, screening, selection, execution, reporting, and technology transfer. Includes contracting office support for contract closeouts, travel to conduct program management oversight, and program coordination and education to DoD stakeholders. FY 2021 to FY 2022 Increase/Decrease Statement: Adjusted for Inflation	0.127	0.200	0.204
Accomplishments/Planned Programs Subtotals	3.492	5.086	5.313

	FY 2020	FY 2021
Congressional Add: Program increase - biopolymers for military infrastructure	2.853	3.000
FY 2020 Accomplishments: Biopolymers for military infrastructure		
FY 2021 Plans: Biopolymers for military infrastructure		
Congressional Adds Subtotals	2.853	3.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>	Project (Number/Name) 035 / <i>National Defense Cntr For Enviro Excellence</i>

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

N/A

Remarks

D. Acquisition Strategy

The NDCEE is a national asset focused on DoD applications that include technology transfer to appropriate DoD transition partners. The management strategy for the NDCEE ensures that all projects have a potential multi-service benefit and have a high potential for transition success. At the strategic level, the NDCEE Executive Advisory Board (EAB) is chaired by the DoD NDCEE Lead Agent on behalf of the Assistant Secretary of Defense for Sustainment and is representative of the services and DoD. The EAB and the Program Director are supported by the NDCEE Technical Advisory Group (TAG) to help ensure that NDCEE investments are maximized across DoD and the Services. At the tactical level, the three Focus Groups (environment, safety/occupational health, and energy) cultivate and recommend priority projects to the TAG and Project Selection Committee for funding. Transition Partners ensure that NDCEE's investments are carried forward in the next phases of the Research Development Test and Evaluation process, as identified in each funded project's Technology Transition Agreement.

NDCEE projects enable readiness for the Services under increasingly complex and demanding scenarios. The interdependency of national security with energy supply and costs, water supply and costs, environmental resiliency, and human health and safety are clear and NDCEE projects provide forward-looking solutions to these challenges. Failure to further fund and validate promising technologies that are at the mature or Commercial-off-the-Shelf stage, would result in lost modernization opportunities and validation before they go into a military environment. These initiatives need to be carried forward into an operational/realistic testing environment so that they can support mission readiness and training when ultimately fielded to the Services.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army			Date: May 2021		
Appropriation/Budget Activity 2040 / 4		R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>		Project (Number/Name) 035 / <i>National Defense Cntr For Enviro Excellence</i>	

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NDCEE Management and Operations (Enduring)																												
NDCEE Env, Safety, Occ Health, and Energy Technology Dem/A																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>	Project (Number/Name) 035 / <i>National Defense Cntr For Enviro Excellence</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NDCEE Management and Operations (Enduring)	1	2019	4	2024
NDCEE Env, Safety, Occ Health, and Energy Technology Dem/Val (Enduring)	1	2019	4	2024

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army										Date: May 2021		
Appropriation/Budget Activity 2040 / 4					R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>				Project (Number/Name) E21 / <i>Environmental Quality Technology Dem/Val</i>			
COST (\$ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
E21: <i>Environmental Quality Technology Dem/Val</i>	-	12.744	12.820	6.608	-	6.608	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project supports Advanced Component Development and Prototypes of innovative environmental quality technologies that modernize materials and processes required for current and future operational sustainment and warfighter training capabilities. The Project showcases technologies that increase life safety, reduce Soldier and worker human health risks, enhance readiness and enable mission capabilities of the current and future force with a focus on eliminating the high priority issues associated with hexavalent chromium, cadmium and airborne lead through material substitution. The Project expedites technology transition from the laboratory to operational use by demonstrating modern materials and processes to fulfill or surpass the performance requirements outlined in Material Specifications, Depot Maintenance Work Requirements, Technical Manuals, Drawings and other technical data. Forward-looking materials and processes demonstrated under this project support 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. Modernized materials and processes have the additional benefit of reducing future regulatory compliance and cleanup requirements while simultaneously increasing performance and standardization across the Army, resulting in significantly reduced life cycle costs incurred by acquisition, industrial base and installation end users.

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

	FY 2020	FY 2021	FY 2022
Title: Environmental quality technology demonstration and validation: Toxic Metal Reduction in Surface Finishing of Army Weapon Systems (CCDC)	2.097	3.154	2.439
Description: Increase operational readiness and reduce Soldier and worker human health risks by reducing or eliminating the use of cancer-causing hexavalent chromium, cadmium and associated toxic materials used in surface finishing processes for the current and future force. These Safer Alternatives for Readiness (SAFR) technologies will be used to provide superior corrosion and wear protection for components used on Future Vertical Lift and Next Generation Combat Vehicles and enable increased performance/extended barrel life for Long Range Precision Fire systems.			
FY 2021 Plans: Complete demonstration of cold spray gun barrels with increased barrel life; validate hexavalent chromium-free aluminum anodizing process at pilot scale and demonstrate on relevant aircraft.			
FY 2022 Plans:			

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>	Project (Number/Name) E21 / <i>Environmental Quality Technology Dem/Val</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>Will complete fatigue and performance testing needed to approve zinc-nickel alternatives to cadmium in aircraft components; will validate performance of hybrid additive manufacturing techniques using wear resistant materials and high strength alloys to replace hard chrome plating in crew-served machine guns.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Funds decrease reflects technology area ramping down toward completion in FY 2023.</p>				
<p>Title: Environmental quality technology demonstration and validation: Airborne Lead Reduction from Army Weapon Systems (CCDC)</p> <p>Description: Sustain Soldier training readiness, maintain/restore training capability at ranges closed due to dangerous levels of lead exposure and increase life safety and protection of human health on Army installations by reducing or eliminating the use of toxic lead compounds - which are known to cause damage to central nervous, cardiovascular and immune systems with long-term effects for children, as well as potential developmental impacts, including IQ loss, behavioral issues and hearing loss - in rocket and missile propellants and primary explosives (primers/detonators/initiators) for the current and future force. These Safer Alternatives for Readiness (SAFR) will provide a domestic, readily available source for lead-free primary explosives used in all Long Range Precision Fires and Soldier Lethality systems.</p> <p>FY 2021 Plans: Will demonstrate lead-free fuze (combining primer and detonator) in hand grenade configuration; will demonstrate lead-free minimum signature rocket propellants in heavy-weight motors.</p> <p>FY 2022 Plans: Will demonstrate alternative fuze system using qualified lead-free primary explosives in artillery round configuration; will conduct flight-weight motor testing for lead-free minimum signature rocket propellants.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Increase reflects technology area ramping up to include higher fidelity live-fire testing.</p>		1.659	2.232	2.482
<p>Title: Environmental quality technology demonstration and validation: Low Global Warming Potential (LGWP) Alternatives to Ozone Depleting Substances (ODS) (CCDC)</p> <p>Description: Evaluate low GWP ODS alternatives being developed by industry to assess their toxicity and flammability hazards and verify their acceptability in military unique refrigeration and fire suppression applications. These Safer Alternatives for Readiness (SAFR) technologies will support all Future Vertical Lift and Next Generation Combat Vehicle systems.</p> <p>FY 2021 Plans:</p>		0.191	0.226	0.235

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>	Project (Number/Name) E21 / <i>Environmental Quality Technology Dem/Val</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>Conduct vehicle-scale demonstrations for alternative, low GWP extinguishing agents with high potential to meet safety and performance requirements for occupied crew compartments.</p> <p>FY 2022 Plans: Will demonstrate alternative, low GWP refrigerant agents with high potential to meet safety and performance requirements for mobile refrigeration systems.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Economic adjustment.</p>				
<p>Title: Environmental quality technology demonstration and validation: Insensitive Munitions (IM) Wastewater Treatment (USACE)</p> <p>Description: Demonstrate and validate optimized scalable wastewater treatment system basic technology for the destructive treatment of existing and emerging insensitive munitions (IM) contaminated production wastewater generated during Army ammunition plant munitions production.</p> <p>FY 2021 Plans: Will install pilot demonstration unit for continuous precipitation and membrane concentration of IM wastewaters at MCAAP. Will work with local authorities to verify release limits and treatment optimization.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Decrease reflects early transition of products in FY21.</p>		1.534	0.905	-
<p>Title: Environmental quality technology demonstration and validation: Environmental Toolkit for Expeditionary Operations (USACE)</p> <p>Description: Conduct pilot-scale demonstration and validation studies to determine the effectiveness of basic technologies/ methods developed for rapidly collecting environmental data in the field for the purposes of reducing impact of environmental requirements on installations. Demonstrate the ability of ETEO software to communicate easily with new, commercially available sensors through simple device driver (with minimal or no development). Assess available chemical databases on the new sensor for their ability to detect and quantify environmental contaminants. Demonstrate the operational ETEO software and sensors at designated locations.</p> <p>FY 2021 Plans: Will develop instructional videos for all current ETEO tools and software to streamline training use of ETEO for current and future users. Test and demonstrate a new sensor as a potential replacement for the PET kit. Reduce the amount of consumables</p>		0.794	0.505	0.510

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021		
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>	Project (Number/Name) E21 / <i>Environmental Quality Technology Dem/Val</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2020	FY 2021	FY 2022
<p>in the ETEO toolkit. Will demonstrate new auto-fill capabilities in the reporting software to decrease Soldiers time populating Environmental Baseline Surveys.</p> <p>FY 2022 Plans: Will perform demonstrations of the ETEO sensor suite and software in austere locations. Will validate kits with USACE Forward Engineering Support Teams and National Guard units.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Complete task and finalize transition of product.</p>				
<p>Title: Environmental quality technology demonstration and validation: Fate and Risk Evaluation System for Contaminants (FRESCO?)</p> <p>Description: FRESCO will ensure Solider readiness through reduction in training range down time. Validation of FRESCO will provide the capability to model and forecast contaminant fate and health risks associated with new military materials in the environment, pursuant to unfilled technology gap identified in DoD Instruction Number 4715.18.</p> <p>FY 2021 Plans: Validation of FRESCO will provide the capability to model and forecast contaminant fate and health risks associated with new military materials in the environment, pursuant to unfilled technology gap identified in DoD Instruction Number 4715.18.The FRESCO System will be further validated using existing Army data - the project team will work with our Technology Transition Agreement (TTA) partners to select an applicable demonstration site that will allow us to demonstration and validate the full system features.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement: Task scheduled to complete demonstration/validation and to transition in FY21.</p>		1.469	0.798	-
<p>Title: Decontamination Effluent Treatment System (DETS) Demonstration/Validation (USACE)</p> <p>Description: Demonstrate and validate the Decontamination Effluent Treatment System (DETS), an optimized scalable system for the treatment of Chemical, Biological, Radioactive, & Nuclear (CBRN) decontamination wastewater, while exploring enhancements to improve performance.</p> <p>FY 2022 Plans: Will demonstrate Decontamination Effluent Treatment System and test it on simulants and actual chemical and radiological substrates. In addition, the DETS will be tested on biological constituents.</p> <p>FY 2021 to FY 2022 Increase/Decrease Statement:</p>		-	-	0.562

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>	Project (Number/Name) E21 / <i>Environmental Quality Technology Dem/Val</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2020	FY 2021	FY 2022
Increase of funds needed to modify system for biological constituents.			
Title: Engineered Technologies for Risk Mitigation and Management of PFOS/PFOA on Army Installations (USACE) Description: Demonstrate and validate technologies such as 3D printed composite structures and advanced materials for remediation and monitoring of PFAS, novel methods for PFAS destruction, rapid risk based classification and characterization computational models, and monitoring and extraction technologies including PFAS sensors. FY 2022 Plans: Will demonstrate capability of PFAS Effluent Treatment System (PETS) to decontaminate existing PFAS contaminated fire suppression infrastructure. FY 2021 to FY 2022 Increase/Decrease Statement: New task needed to address growing impact of PFAS contamination on Army installations.	-	-	0.380
Accomplishments/Planned Programs Subtotals	7.744	7.820	6.608

	FY 2020	FY 2021
Congressional Add: Environmental quality technology demonstration and validation: Congressional Add - Protective Coatings/Biopolymers (CCDC) FY 2020 Accomplishments: Congressional interest item	5.000	-
Congressional Add: Environmental quality technology demonstration and validation: Congressional Add - High Pressure Waterjet Technology (USACE) FY 2021 Plans: Congressional Interest Item	-	5.000
Congressional Adds Subtotals	5.000	5.000

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• 06I: <i>Environmental Quality Technology Support</i>	0.539	0.428	0.444	-	0.444	-	-	-	-	-	-
Remarks											

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / Environmental Quality Technology - Dem/Val	Project (Number/Name) E21 / Environmental Quality Technology Dem/Val

D. Acquisition Strategy

The project ultimately transitions successfully demonstrated environmental quality technologies to Army acquisition, industrial base and installation end users. All technology efforts address a valid Army Environmental Requirements and Technology Assessments (AERTA) requirement. Efforts approved by senior Army environmental leadership receive Advanced Component Development and Prototype funding to fully demonstrate and validate the technology for transition to end users for follow on implementation.

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Army			Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>	Project (Number/Name) E21 / <i>Environmental Quality Technology Dem/Val</i>	

Event Name	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Toxic Metals Reduction Demonstration/Validation	█				█				█				█															
Airborne Lead Reduction Demonstration/Validation	█				█				█				█				█				█							
Insensitive Munitions (IM) Wastewater Treatment	█				█				█				█															
Fate and Risk Evaluation System for Contaminants	█				█				█				█															
Environmental Toolkit for Expeditionary Operations	█				█				█				█															
Low Global Warming Potential Dem/Val	█				█				█				█				█				█							

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Army		Date: May 2021
Appropriation/Budget Activity 2040 / 4	R-1 Program Element (Number/Name) PE 0603779A / <i>Environmental Quality Technology - Dem/Val</i>	Project (Number/Name) E21 / <i>Environmental Quality Technology Dem/Val</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Toxic Metals Reduction Demonstration/Validation	1	2015	4	2023
Airborne Lead Reduction Demonstration/Validation	1	2015	4	2025
ESOH Impacts of Short-Term Noise Assessment Procedures Demonstration/Validation	1	2016	4	2019
Advanced Water Reuse Technology for Fixed Installations	1	2016	4	2019
Insensitive Munitions (IM) Wastewater Treatment	1	2018	4	2022
Fate and Risk Evaluation System for Contaminants	1	2019	4	2021
Environmental Toolkit for Expeditionary Operations	1	2019	4	2022
Low Global Warming Potential Dem/Val	1	2019	4	2025